



SEQUENCE LISTING

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Goichi HONDA
Shuji MURAMATSU
Yukiko NAGANO

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<150> 60/314,385

<151> 2001-08-24

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<170> PatentIn Ver. 2.0

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<212> PRT

<213> Homo sapiens

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35 40 45

Ala Gly Pro Pro Pro Pro Gly Phe Lys Ser Glu Phe Thr Gly Pro Gln
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Asn Thr Gly His Gly Ala Thr Ser Gly Phe Gly Ser Ala Phe Thr Gly
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Arg Ala Ala Thr Pro Phe Ser Asp Ser Trp Tyr Tyr Pro Ser Tyr Pro
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ccc tcc tac cct ggc acg tgg aat agg gct tac tca ccc ctt cat gga 613
Pro Ser Tyr Pro Gly Thr Trp Asn Arg Ala Tyr Ser Pro Leu His Gly
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ggc tcg ggc agc tat tcg gta tgt tca aac tca gac acg aaa acc aga 661
Gly Ser Gly Ser Tyr Ser Val Cys Ser Asn Ser Asp Thr Lys Thr Arg
145 150 155

act gca tca gga tat ggt ggt acc agg aga cga taaagtagaa agttggagtc 714
Thr Ala Ser Gly Tyr Gly Gly Thr Arg Arg Arg
160 165

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tatgtcagtg taacatgcag atgtatattg cagtttttga aagtgatcat tactgtggaa 954

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ctg aag gag tct gga aag cag cac ggc ttt gcc tct ttc tct gat tat	597
Leu Lys Glu Ser Gly Lys Gln His Gly Phe Ala Ser Phe Ser Asp Tyr	
150 155 160	
tat tat aag tgg tcc tcg gcg gat tcc tgt aac atg agt gga ttg att	645
Tyr Tyr Lys Trp Ser Ser Ala Asp Ser Cys Asn Met Ser Gly Leu Ile	
165 170 175	
acc atc gtg gta ctc ctt ggg atc gcc ttt gta gtc tat aag ctg ttc	693
Thr Ile Val Val Leu Leu Gly Ile Ala Phe Val Val Tyr Lys Leu Phe	
180 185 190	
ctg agt gac ggg cag tat tct cct cca ccg tac tct gag tat cct cca	741
Leu Ser Asp Gly Gln Tyr Ser Pro Pro Pro Tyr Ser Glu Tyr Pro Pro	
195 200 205	
ttt tcc cac cgt tac cag aga ttc acc aac tca gca gga cct cct ccc	789
Phe Ser His Arg Tyr Gln Arg Phe Thr Asn Ser Ala Gly Pro Pro Pro	
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cca ggc ttt aag tct gag ttc aca gga cca cag aat act ggc cat ggt	837
Pro Gly Phe Lys Ser Glu Phe Thr Gly Pro Gln Asn Thr Gly His Gly	
230 235 240	
gca act tct ggt ttt ggc agt gct ttt aca gga caa caa gga tat gaa	885
Ala Thr Ser Gly Phe Gly Ser Ala Phe Thr Gly Gln Gln Gly Tyr Glu	
245 250 255	
aat tca gga cca ggg ttc tgg aca ggc ttg gga act ggt gga ata cta	933
Asn Ser Gly Pro Gly Phe Trp Thr Gly Leu Gly Thr Gly Gly Ile Leu	
260 265 270	
gga tat ttg ttt ggc agc aat aga gcg gca aca ccc ttc tca gac tcg	981
Gly Tyr Leu Phe Gly Ser Asn Arg Ala Ala Thr Pro Phe Ser Asp Ser	
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Trp Tyr Tyr Pro Ser Tyr Pro Pro Ser Tyr Pro Gly Thr Trp Asn Arg	
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gct tac tca ccc ctt cat gga ggc tcg ggc agc tat tcg gta tgt tca	1077
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aac tca gac acg aaa acc aga act gca tca gga tat ggt ggt acc agg	1125
Asn Ser Asp Thr Lys Thr Arg Thr Ala Ser Gly Tyr Gly Gly Thr Arg	
325 330 335	
aga cga taaagtagaa agttggagtc aaacactgga tgcagaaatt ttggattttt	1181
Arg Arg	
catcactttc tctttagaaa aaaagtacta cctgttaaca attgggaaaa ggggatattc	1241

The musical score for 'The Rose Tree' is presented on a single system with two staves. The upper staff is for the voice, marked 'Soprano' and 'Alto'. The lower staff is for the piano accompaniment, marked 'Piano'. The key signature is one flat (B-flat), and the time signature is 4/4. The melody is simple and folk-like, with a gentle rise and fall. The piano accompaniment provides a steady, rhythmic foundation with chords and single notes. The lyrics are written below the piano staff.

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<211> 127
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<213> Homo sapiens
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Gly	Leu	Ile	Ala	Pro	Gly	Pro	Thr	Thr	Ala	Val	Ser	Tyr	Met	Ser	Val		
		35					40					45					
Lys	Cys	Val	Asp	Ala	Arg	Lys	Asn	His	His	Lys	Thr	Lys	Trp	Phe	Val		
	50					55					60						
Pro	Trp	Gly	Pro	Asn	His	Cys	Asp	Lys	Ile	Arg	Asp	Ile	Glu	Glu	Ala		
65					70					75					80		
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Pro	Leu	Pro	His	Met	Glu	Met	Ser	Pro	Trp	Phe	Gln	Phe	Met	Leu	Phe		
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 Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val
 35 40 45
 Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
 50 55 60
 Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
 65 70 75 80
 Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile
 85 90 95
 Pro Leu Pro His Met Glu Met Ser Pro Trp Phe Gln Phe Met Leu Phe
 100 105 110
 Ile Leu Gln Leu Asp Ile Ala Phe Lys Leu Asn Asn Gln Ile Arg Glu
 115 120 125
 Asn Ala Glu Val Ser Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala
 130 135 140
 Phe Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu
 145 150 155 160
 Lys Cys Thr Phe Thr Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr
 165 170 175
 Tyr Glu Cys Asp Val Leu Pro Tyr Ala Gln His Leu His His Tyr Gly
 180 185 190
 Val Val Leu Glu Glu Asp His His Asp Val Pro Thr Pro Ser Ala Ser
 195 200 205
 Gly Lys Ser His Leu Cys Pro Trp Asp Phe His Asp Leu Tyr Gln Tyr
 210 215 220
 Pro Ser Gly Met Val Phe His Arg Val
 225 230

<210> 8
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 <212> DNA
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<220>

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

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Pro Gly Pro Thr Ala Val Ser Tyr Met Ser Val Lys Cys Val Asp

Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val Pro Trp Gly Pro
55 60 65

Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala Ile Pro Arg Glu

Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile Pro Leu Pro His
85 90 95 100

Met	Glu	Met	Ser	Pro	Trp	Phe	Gln	Phe	Met	Leu	Phe	Ile	Leu	Gln	Leu
				105					110					115	

Asp Ile Ala Phe Lys Leu Asn Asn Gln Ile Arg Glu Asn Ala Glu Val
120 125 130

Ser Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala Phe Ala Glu Trp
135 140 145

Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu Lys Cys Thr Phe
150 155 160

Thr Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr Tyr Glu Cys Asn
165 170 175 18

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Val Leu Pro Tyr Ala Gln His Leu His His Tyr Gly Val Val Leu Glu
185 190 195

gag gat cac cat gat gtc ccg acc ccc agt gct tct gga aaa agt cat 860
Glu Asp His His Asp Val Pro Thr Pro Ser Ala Ser Gly Lys Ser His
200 205 210

ctt tgc cct tgg gat ttc cat gac ctt tat caa tat ccc agt gga atg 908
Leu Cys Pro Trp Asp Phe His Asp Leu Tyr Gln Tyr Pro Ser Gly Met
215 220 225

gtt ttc cat cgg gtt tgactggacc tggatgctgc tgtttggtga catccgacag 963
Val Phe His Arg Val
230

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 Ala Ala Lys Asn Phe Glu Asp Val Arg Cys Lys Cys Ile Cys Pro Pro
 35 40 45
 Tyr Lys Glu Asn Ser Gly His Ile Tyr Asn Lys Asn Ile Ser Gln Lys
 50 55 60
 Asp Cys Asp Cys Leu His Val Val Glu Pro Met Pro Val Arg Gly Pro
 65 70 75 80
 Asp Val Glu Ala Tyr Cys Leu Arg Cys Glu Cys Lys Tyr Glu Glu Arg
 85 90 95
 Ser Ser Val Thr Ile Lys Val Thr Ile Ile Ile Tyr Leu Ser Ile Leu
 100 105 110
 Gly Leu Leu Leu Leu Tyr Met Val Tyr Leu Thr Leu Val Glu Pro Ile
 115 120 125
 Leu Lys Arg Arg Leu Phe Gly His Ala Gln Leu Ile Gln Ser Asp Asp
 130 135 140
 Asp Ile Gly Asp His Gln Pro Phe Ala Asn Ala His Asp Val Leu Ala
 145 150 155 160
 Arg Ser Arg Ser Arg Ala Asn Val Leu Asn Lys Val Glu Tyr Ala Gln
 165 170 175
 Gln Arg Trp Lys Leu Gln Val Gln Glu Gln Arg Lys Ser Val Phe Asp
 180 185 190
 Arg His Val Val Leu Ser
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1004200 0130400

Asn Lys Val Glu Tyr Ala Gln Gln Arg Trp Lys Leu Gln Val Gln Glu
170 175 180 185

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Gln Arg Lys Ser Val Phe Asp Arg His Val Val Leu Ser
190 195

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35 40 45
Ser Ala Ala Tyr Phe Asp Tyr Lys Asp Glu Ser Gly Phe Pro Lys Pro
50 55 60
Pro Ser Tyr Asn Val Ala Thr Thr Leu Pro Ser Tyr Asp Glu Ala Glu
65 70 75 80

aag gat gag tct ggg ttt cca aag ccc cca tct tac aat gta gct aca 365
Lys Asp Glu Ser Gly Phe Pro Lys Pro Ser Tyr Asn Val Ala Thr
60 65 70

aca ctg ccc agt tat gat gaa gcg gag agg acc aag gct gaa gct act 413
Thr Leu Pro Ser Tyr Asp Glu Ala Glu Arg Thr Lys Ala Glu Ala Thr
75 80 85

atc cct ttg gtt cct ggg aga gat gag gat ttt gtg ggt cgg gat gat 461
Ile Pro Leu Val Pro Gly Arg Asp Glu Asp Phe Val Gly Arg Asp Asp
90 95 100

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Phe Asp Asp Ala Asp Gln Leu Arg Ile Gly Asn Asp Gly Ile Phe Met
105 110 115

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Leu Thr Phe Phe Met Ala Phe Leu Phe Asn Trp Ile Gly Phe Phe Leu
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Ser Phe Cys Leu Thr Thr Ser Ala Ala Gly Arg Tyr Gly Ala Ile Ser
140 145 150

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Gly Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser
155 160 165

acc tat ttc cct gga tat ttt gat ggt cag tac tgg ctc tgg tgg gtg 701
Thr Tyr Phe Pro Gly Tyr Phe Asp Gly Gln Tyr Trp Leu Trp Trp Val
170 175 180

ttc ctt gtt tta ggc ttt ctc ctg ttt ctc aga gga ttt atc aat tat 749
Phe Leu Val Leu Gly Phe Leu Leu Phe Leu Arg Gly Phe Ile Asn Tyr
185 190 195

gca aaa gtt cgg aag atg cca gaa act ttc tca aat ctc ccc agg acc 797
Ala Lys Val Arg Lys Met Pro Glu Thr Phe Ser Asn Leu Pro Arg Thr
200 205 210 215

aga gtt ctc ttt att tat taaagatggt ttctggcaaa ggccttcctg 845
Arg Val Leu Phe Ile Tyr
220

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 35 40 45
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 50 55 60
 Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro
 65 70 75 80
 Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu
 85 90 95
 Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln
 100 105 110
 Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala
 115 120 125
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Leu Leu Asn Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro
15 20 25

cct act tca aac cca gca ccg cag att gtg cag gct gcg tct tca gca 147
Pro Thr Ser Asn Pro Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala
30 35 40 45

cca gca ctt gaa act gac tct tcc cct cca cca tat agt agt att act 195
Pro Ala Leu Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr
50 55 60

gtg gaa gta cct aca act tca gat aca gaa gtt tac ggt gag ttt tat 243
Val Glu Val Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr
65 70 75

ccc gtg cca cct ccc tat agc gtt gct acc tct ctt cct aca tac gat 291
Pro Val Pro Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp
80 85 90

gaa gct gag aag gct aaa gct gct gca atg gca gct gca gca gca gaa 339
Glu Ala Glu Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu

95	100	105
aca tct caa aga att cag gag gaa gag tgt cca cca aga gat gac ttc Thr Ser Gln Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe 110 115 120 125	387	
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aatttaattt	acattcataa	actactatat	ttcccatctt	gcaaattcatt	ttatgtctca	2038
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cttattttatt	attagacatt	actactaaaa	ggtacatcta	actattcagg	gacatttttc	2218
catttccaaa	aaataaaatt	tattatgctt	tataacctct	tctgtatttt	ctaatttttt	2278
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<213> Homo sapiens
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Asn Pro Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala Pro Ala Leu
      35              40              45
Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val
  50              55              60
Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro
  65              70              75              80
Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu
      85              90              95

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Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln
 100 105 110

Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala
 115 120 125

Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe
 130 135 140

Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile
 145 150 155 160

Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu
 165 170 175

Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr
 180 185 190

Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu
 195 200 205

Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg
 210 215 220

Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe
 225 230 235 240

Leu Leu

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 <213> Homo sapiens

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 Leu Leu Asn Glu Glu Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro
 15 20 25

cct act tca aac cca gca ccg cag att gtg cag gct gtg tct tca gca 147
 Pro Thr Ser Asn Pro Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala
 30 35 40 45

cca gca ctt gaa act gac tct tcc cct cca cca tat agt agt att act 195
 Pro Ala Leu Glu Thr Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr
 50 55 60

gtg gaa gta cct aca act tca gat aca gaa gtt tac ggt gag ttt tat 243
Val Glu Val Pro Thr Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr
65 70 75

ccc gtg cca cct ccc tat agc gtt gct acc tct ctt cct aca tac gat 291
Pro Val Pro Pro Pro Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp
80 85 90

gaa gct gag aag gct aaa gct gct gca atg gca gct gca gca gca gaa 339
Glu Ala Glu Lys Ala Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu
95 100 105

aca tct caa aga att cag gag gaa gag tgt cca cca aga gat gac ttc 387
Thr Ser Gln Arg Ile Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe
110 115 120 125

agt gat gca gac cag ctc aga gtg ggg aat gat ggc att ttc atg ctg 435
Ser Asp Ala Asp Gln Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu
130 135 140

gca ttt ttc atg gca ttt att ttc aac tgg ctt gga ttt tgt tta tcc 483
Ala Phe Phe Met Ala Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser
145 150 155

ttc tgt atc acc aat acc ata gct gga agg tat ggt gct atc tgc gga 531
Phe Cys Ile Thr Asn Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly
160 165 170

ttt ggc ctt tcc ttg atc aaa tgg atc ctt att gtc agg ttt tct gat 579
Phe Gly Leu Ser Leu Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp
175 180 185

tat ttt act gga tat ttc aat gga cag tat tgg ctt tgg tgg ata ttt 627
Tyr Phe Thr Gly Tyr Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe
190 195 200 205

ctt gta ctt ggc ctg ctc ctt ttc ttc aga gga ttt gtt aat tat cta 675
Leu Val Leu Gly Leu Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu
210 215 220

aaa gtc aga aac atg tct gaa agt atg gca gct gct cat aga aca agg 723
Lys Val Arg Asn Met Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg
225 230 235

tat ttc ttc tta ttg tagagactgc atcaaccoga cattcctttc ttataccaat 778
Tyr Phe Phe Leu Leu
240

gtgaaatttc cagatcatct gtaaacctac aactttaata gaagactact aataacagaa 838

gacaaattag tgaagaaaag acggagtttc gaaattgaat ggcagggtgg tttttgctta 898

caagccattt ctgttcattc ttttaagtatc tatatttcat ttgttttgca catatgcata 958

tgtgcccatt taagatatatt gcataactt gatagaaaacc ataaagttgt agcagtttaag 1018

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<211> 336
<212> PRT
<213> Homo sapiens
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Leu Asn Ser Ala Arg Gly Ala Pro Glu Leu Leu Arg Gly Thr Ala Thr
20 25 30

Asn Ala Glu Val Ser Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu
35 40 45

Leu Pro Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro
50 55 60

Ala Ala Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly
65 70 75 80

Glu Asp Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp
85 90 95

His His Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu
100 105 110

Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro
115 120 125

Ala Pro Gln Ile Val Gln Ala Val Ser Ser Ala Pro Ala Leu Glu Thr
130 135 140

Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val Pro Thr
145 150 155 160

Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro
165 170 175

Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala
180 185 190

Lys Ala Ala Ala Met Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile
195 200 205

Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln
210 215 220

Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala
225 230 235 240

Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn
245 250 255

Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu
260 265 270

Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr
275 280 285

Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu
290 295 300

Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met
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325 330 335

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 <212> DNA
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 <222> (53)..(1060)

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 Arg Arg Arg Ser Gln Arg Val Cys Ala Ser Gly Pro Ser Met Leu Asn
 5 10 15

agc gcg cgc ggc gcc ccg gag ctt ctc cgc gga acc gcg acc aac gcg 154
 Ser Ala Arg Gly Ala Pro Glu Leu Leu Arg Gly Thr Ala Thr Asn Ala
 20 25 30

gag gtc tcg gcg gcc gct gcg gga gcc aca gga agt gaa gag ctt ccg 202
 Glu Val Ser Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu Leu Pro
 35 40 45 50

ccg gga gac cgc ggc tgc agg aac gga ggc gga agg ggc cct gcg gcg 250
 Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro Ala Ala
 55 60 65

acg acg tcg tcg acg ggg gtg gcc gtg gga gct gag cac gga gaa gac 298
 Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly Glu Asp
 70 75 80

tcc ctc tct cgg aag ccg gat ccc gag ccg ggc agg atg gat cac cac 346
 Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp His His
 85 90 95

cag ccg ggg act ggg cgc tac cag gtg ctt ctt aat gaa gag gat aac 394
 Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu Asp Asn
 100 105 110

tca gaa tca tcg gct ata gag cag cca cct act tca aac cca gca ccg 442
 Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro Ala Pro
 115 120 125 130

cag att gtg cag gct gtg tct tca gca cca gca ctt gaa act gac tct 490
 Gln Ile Val Gln Ala Val Ser Ser Ala Pro Ala Leu Glu Thr Asp Ser
 135 140 145

tcc cct cca cca tat agt agt att act gtg gaa gta cct aca act tca 538
 Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val Pro Thr Thr Ser
 150 155 160

gat aca gaa gtt tac ggt gag ttt tat ccc gtg cca cct ccc tat agc 586
 Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro Tyr Ser

165	170	175	
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Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala Lys Ala			
180	185	190	
gct gca atg gca gct gca gca gca gaa aca tct caa aga att cag gag 682			
Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile Gln Glu			
195	200	205	210
gaa gag tgt cca cca aga gat gac ttc agt gat gca gac cag ctc aga 730			
Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln Leu Arg			
	215	220	225
gtg ggg aat gat ggc att ttc atg ctg gca ttt ttc atg gca ttt att 778			
Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala Phe Ile			
	230	235	240
ttc aac tgg ctt gga ttt tgt tta tcc ttc tgt atc acc aat acc ata 826			
Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn Thr Ile			
	245	250	255
gct gga agg tat ggt gct atc tgc gga ttt ggc ctt tcc ttg atc aaa 874			
Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu Ile Lys			
	260	265	270
tgg atc ctt att gtc agg ttt tct gat tat ttt act gga tat ttc aat 922			
Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr Phe Asn			
275	280	285	290
gga cag tat tgg ctt tgg tgg ata ttt ctt gta ctt ggc ctg ctc ctt 970			
Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu Leu Leu			
	295	300	305
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Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met Ser Glu			
	310	315	320
agt atg gca gct gct cat aga aca agg tat ttc ttc tta ttg 1060			
Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe Leu Leu			
	325	330	335
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 <212> PRT
 <213> Homo sapiens

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 20 25 30
 Asn Ala Glu Val Ser Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu
 35 40 45
 Leu Pro Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro
 50 55 60

Ala Ala Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly
65 70 75 80

Glu Asp Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp
85 90 95

His His Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu
100 105 110

Asp Asn Ser Glu Ser Ser Ala Ile Glu Gln Pro Pro Thr Ser Asn Pro
115 120 125

Ala Pro Gln Ile Val Gln Ala Ala Ser Ser Ala Pro Ala Leu Glu Thr
130 135 140

Asp Ser Ser Pro Pro Pro Tyr Ser Ser Ile Thr Val Glu Val Pro Thr
145 150 155 160

Thr Ser Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro
165 170 175

Tyr Ser Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala
180 185 190

Lys Ala Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile
195 200 205

Gln Glu Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln
210 215 220

Leu Arg Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala
225 230 235 240

Phe Ile Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn
245 250 255

Thr Ile Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu
260 265 270

Ile Lys Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr
275 280 285

Phe Asn Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu
290 295 300

Leu Leu Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met
305 310 315 320

Ser Glu Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe Leu Leu
325 330 335

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<213> Homo sapiens

1004-005 1230-003

<220>

<221> CDS

<222> (53) .. (1060)

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 Arg Arg Arg Ser Gln Arg Val Cys Ala Ser Gly Pro Ser Met Leu Asn
 5 10 15

agc gcg cgc ggc gcc ccg gag ctt ctg cgc gga acc gcg acc aac gcg 154
Ser Ala Arg Gly Ala Pro Glu Leu Leu Arg Gly Thr Ala Thr Asn Ala
 20 25 30

gag gtc tcg gcg gcc gct gcg gga gcc aca gga agt gaa gag ctt ccg 202
Glu Val Ser Ala Ala Ala Ala Gly Ala Thr Gly Ser Glu Glu Leu Pro
35 40 45 50

ccg gga gac cgc ggc tgc agg aac gga ggc gga agg ggc cct gcg gcg 250
Pro Gly Asp Arg Gly Cys Arg Asn Gly Gly Gly Arg Gly Pro Ala Ala
55 60 65

acg acg tcg tcg acg ggg gtg gcc gtg gga gct gag cac gga gaa gac 298
Thr Thr Ser Ser Thr Gly Val Ala Val Gly Ala Glu His Gly Glu Asp
70 75 80

tcc ctc tct cgg aag ccg gat ccc gag ccg ggc agg atg gat cac cac 346
Ser Leu Ser Arg Lys Pro Asp Pro Glu Pro Gly Arg Met Asp His His
85 90 95

cag ccg ggg act ggg cgc tac cag gtg ctt ctt aat gaa gag gat aac 394
Gln Pro Gly Thr Gly Arg Tyr Gln Val Leu Leu Asn Glu Glu Asp Asn
100 105 110

tca	gaa	tca	tcg	gct	ata	gag	cag	cca	cct	act	tca	aac	cca	gca	ccg	442
Ser	Glu	Ser	Ser	Ala	Ile	Glu	Gln	Pro	Pro	Thr	Ser	Asn	Pro	Ala	Pro	
115					120					125					130	

cag att gtg cag gct gcg tct tca gca cca gca ctt gaa act gac tct 490
Gln Ile Val Gln Ala Ala Ser Ser Ala Pro Ala Leu Glu Thr Asp Ser
135 140 145

tcc	cct	cca	cca	tat	agt	agt	att	act	gtg	gaa	gta	cct	aca	act	tca	538
Ser	Pro	Pro	Pro	Tyr	Ser	Ser	Ile	Thr	Val	Glu	Val	Pro	Thr	Thr	Ser	
			150					155					160			

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Asp Thr Glu Val Tyr Gly Glu Phe Tyr Pro Val Pro Pro Pro Tyr Ser
165 170 175

ggt gct acc tct ctt cct aca tac gat gaa gct gag aag gct aaa gct 634
Val Ala Thr Ser Leu Pro Thr Tyr Asp Glu Ala Glu Lys Ala Lys Ala
180 185 190

gct gca atg gca gct gca gca gca gaa aca tct caa aga att cag gag	682
Ala Ala Met Ala Ala Ala Ala Ala Glu Thr Ser Gln Arg Ile Gln Glu	
195 200 205 210	
gaa gag tgt cca cca aga gat gac ttc agt gat gca gac cag ctc aga	730
Glu Glu Cys Pro Pro Arg Asp Asp Phe Ser Asp Ala Asp Gln Leu Arg	
215 220 225	
gtg ggg aat gat ggc att ttc atg ctg gca ttt ttc atg gca ttt att	778
Val Gly Asn Asp Gly Ile Phe Met Leu Ala Phe Phe Met Ala Phe Ile	
230 235 240	
ttc aac tgg ctt gga ttt tgt tta tcc ttc tgt atc acc aat acc ata	826
Phe Asn Trp Leu Gly Phe Cys Leu Ser Phe Cys Ile Thr Asn Thr Ile	
245 250 255	
gct gga agg tat ggt gct atc tgc gga ttt ggc ctt tcc ttg atc aaa	874
Ala Gly Arg Tyr Gly Ala Ile Cys Gly Phe Gly Leu Ser Leu Ile Lys	
260 265 270	
tgg atc ctt att gtc agg ttt tct gat tat ttt act gga tat ttc aat	922
Trp Ile Leu Ile Val Arg Phe Ser Asp Tyr Phe Thr Gly Tyr Phe Asn	
275 280 285 290	
gga cag tat tgg ctt tgg tgg ata ttt ctt gta ctt ggc ctg ctc ctt	970
Gly Gln Tyr Trp Leu Trp Trp Ile Phe Leu Val Leu Gly Leu Leu Leu	
295 300 305	
ttc ttc aga gga ttt gtt aat tat cta aaa gtc aga aac atg tct gaa	1018
Phe Phe Arg Gly Phe Val Asn Tyr Leu Lys Val Arg Asn Met Ser Glu	
310 315 320	
agt atg gca gct gct cat aga aca agg tat ttc ttc tta ttg	1060
Ser Met Ala Ala Ala His Arg Thr Arg Tyr Phe Phe Leu Leu	
325 330 335	
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gtaaacctac aactttaata gaagactact aataacagaa gacaaattag tgaagaaaag	1180
acggagtttc gaaattgaat ggcagggtgg tttttgctta caagccattt ctgttcattc	1240
tttaagtatc tatatttcat ttgttttgca catatgcata tgtgccatt taagatattt	1300
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cagtgtttga tataattgaa agagttgagt ggataaacag tcttcagct tgtaaagcc	1420
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tttagtttct ggctcttaga ctcatctggc agttctacac atgaaacatc ttttgttata	1540
taaggtgtat tgaaacctgc agtgctgatt attagaaagg atttgtcaga tttttgaaca	1600
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tctgcaatgt	tttcttagaa	attgtgtcca	gatagctttc	actaatttta	aattaagtga	1720
actaaatata	tatgtgtata	tgtatacaca	tatatataca	cacacacata	tatatattta	1780
gaaacgtgag	tgttaaagat	agaatttggt	ttaggacaaa	ttttaagaaa	atgtgggaat	1840
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ttttcagatg	ggaagctgca	tttttaggat	tgcccatcct	aagagatcct	gcaggaagag	1960
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tattatgctt	tataacctct	tctgtatttt	ctaatttttt	cattgtcttt	gataaataaa	2620
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<210> 21
<211> 76
<212> PRT
<213> Homo sapiens
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Lys Lys Phe Leu Glu Pro Tyr Ile Tyr Pro Leu Val Ser Pro Phe Val
      20                      25                      30

Ser Arg Ile Trp Pro Lys Lys Ala Ile Gln Glu Ser Asn Asp Thr Asn
      35                      40                      45

Lys Gly Lys Val Asn Phe Lys Gly Ala Asp Met Asn Gly Leu Pro Thr
      50                      55                      60

Lys Gly Pro Thr Glu Ile Cys Asp Lys Lys Lys Asp
      65                      70                      75

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<210> 22
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 <212> DNA
 <213> Homo sapiens

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 <222> (176)..(403)

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 cggcctccgc ggtgcctgcc ttcgctctca ggttgaggag ctcaagcttg ggaaa atg 178
 Met
 1
 gtg tgc att cct tgt atc gtc att cca gtt ctg ctc tgg atc tac aaa 226
 Val Cys Ile Pro Cys Ile Val Ile Pro Val Leu Leu Trp Ile Tyr Lys
 5 10 15
 aaa ttc ctg gag cca tat ata tac cct ctg gtt tcc ccc ttc gtt agt 274
 Lys Phe Leu Glu Pro Tyr Ile Tyr Pro Leu Val Ser Pro Phe Val Ser
 20 25 30
 cgt ata tgg cct aag aaa gca ata caa gaa tcc aat gat aca aac aaa 322
 Arg Ile Trp Pro Lys Lys Ala Ile Gln Glu Ser Asn Asp Thr Asn Lys
 35 40 45
 ggc aaa gta aac ttt aag ggt gca gac atg aat gga tta cca aca aaa 370
 Gly Lys Val Asn Phe Lys Gly Ala Asp Met Asn Gly Leu Pro Thr Lys
 50 55 60 65
 gga cca aca gaa atc tgt gat aaa aag aaa gac taaagaaatt ttcctaaagg 423
 Gly Pro Thr Glu Ile Cys Asp Lys Lys Lys Asp
 70 75
 accccatcat ttaaaaaatg gacctgataa tatgaagcat cttccttgta attgtctctg 483
 acctttttat ctgagaccgg aattcaggat aggagtctag atatttacct gataactaatc 543
 aggaaatata tgatatccgt atttaaaatg tagttagtta tatttaatga cctcattcct 603
 aagttccttt ttcgttaatg tagctttcat ttctgttatt gctgtttgaa taatatgatt 663
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 tggagtacaa ttttgttgty aaacagtcca gtgaaactgt gcagggaaat gaaggtagaa 843
 ttttgggagg taataatgat gtgaaacata aagatttaat aattactgtc caacacagtg 903
 gagcagcttg tccacaaata tagtaattac tatttattgc tctaaggaag attaaaaaaaa 963
 gatagggaaa agggggaaac ttctttgaaa aatgaaacat ctgttacatt aatgtctaatt 1023

tataaaattt taatccttac tgcatttctt ctgttcctac aaatgtatta aacattcagt 1083

tt

1085

<210> 23
<211> 84
<212> PRT
<213> Homo sapiens

<400> 23
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20 25 30
Leu Trp Thr Ala Ile Thr Leu Phe Ile Phe Leu Val Cys Cys Gln Ile
35 40 45
Pro Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Phe Tyr Trp
50 55 60
Met Arg Val Ile Leu Ala Ser Asn Arg Gly Thr Leu Met Glu His Ser
65 70 75 80
Leu Ser Gly Leu

<210> 24
<211> 1593
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (65)..(316)

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cgcc atg gca atc aaa ttt ctg gaa gtc atc aag ccc ttc tgt gtc atc 109
Met Ala Ile Lys Phe Leu Glu Val Ile Lys Pro Phe Cys Val Ile
1 5 10 15
ctg ccg gaa att cag aag cca gag agg aag att cag ttt aag gag aaa 157
Leu Pro Glu Ile Gln Lys Pro Glu Arg Lys Ile Gln Phe Lys Glu Lys
20 25 30
gtg ctg tgg acc gct atc acc ctc ttt atc ttc tta gtg tgc tgc cag 205
Val Leu Trp Thr Ala Ile Thr Leu Phe Ile Phe Leu Val Cys Cys Gln
35 40 45
att ccc ctg ttt ggg atc atg tct tca gat tca gct gac cct ttc tat 253
Ile Pro Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Phe Tyr

50	55	60	
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Trp Met Arg Val Ile Leu Ala Ser Asn Arg Gly Thr Leu Met Glu His			
65	70	75	
tct ctc tct ggc ctt tagggagtcc cctcttagga caggcactgc ccagcagcaa			356
Ser Leu Ser Gly Leu			
80			
gggcagcaga gttgggtgct aagatcctga ggagctcgag gtttcgagct ggcttttagac			416
attggtggga ccaaggatgt tttgcaggat gccctgatcc taagaagggg gcctgggggt			476
gcgtgcagcc tgtcggggag accccactct gtgcacctat tggctcttct agctgactct			536
tctcgttggg cttagagtct gcctgtttct gctagctccg tgtttagtcc acttgggtca			596
tcagctctgc caagctgagc ctggccaagc taggtggaca gacccttgca gtgatgtccg			656
tttgtccaga ttctgccagt catcactgga cacgtctcct cgcagctgcc ctagcaaggg			716
gagacattgt ggtagctatc agacatggac agaaactgac ttagtgctca caagccccta			776
caccttctgg gctgaagatc acccagctgt gttcagaatt ttcttactgt gcttaggact			836
gcacgcaagt gagcagacac caccgacttc ctttctgcgt caccagtgtc gtcagcagag			896
agaggacagc acaggctcaa ggttggtagt gaagtcaggt tcgggggtgca tgggctgtgg			956
tggtggtgat cagttgctcc agtgtttgaa ataagaagac tcatgtttat gtctggaata			1016
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aagggacaag aagggacttg cctaaagcca ccagcaact cagcagcaga accaagatgg			1136
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aaggcaccag gcctcaggag gagccccata gtcccgctg cagcctgtaa ccatcggtg			1436
ggccctgcaa ggccacact cagccctgt gggatgatgg cagggtgggt ggggtggggc			1496
tgacccagc ttccagggga ctgtcactgt ggacgccaaa atggcataac tgagataagg			1556
tgaataagtg acaaataaag ccagtTTTTT acaaggt			1593

<210> 25
 <211> 179
 <212> PRT
 <213> Homo sapiens

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20 25 30															
tgg acc gct atc acc ctc ttt atc ttc tta gtg tgc tgc cag att ccc	260														
Trp Thr Ala Ile Thr Leu Phe Ile Phe Leu Val Cys Cys Gln Ile Pro															
35 40 45															
ctg ttt ggg atc atg tct tca gat tca gct gac ccg gtc cat gca gtt	308														
Leu Phe Gly Ile Met Ser Ser Asp Ser Ala Asp Pro Val His Ala Val															
50 55 60 65															
gta tac ata gtg ttc atg ctg ggc tcc tgt gca ttc ttc tcc aaa acg	356														
Val Tyr Ile Val Phe Met Leu Gly Ser Cys Ala Phe Phe Ser Lys Thr															
70 75 80															
tgg att gag gtc tca ggt tcc tct gcc aaa gat gtt gca aag cag ctg	404														
Trp Ile Glu Val Ser Gly Ser Ser Ala Lys Asp Val Ala Lys Gln Leu															
85 90 95															
aag gag cag cag atg gtg atg aga ggc cac cga gag acc tcc atg gtc	452														
Lys Glu Gln Gln Met Val Met Arg Gly His Arg Glu Thr Ser Met Val															
100 105 110															
cat gaa ctc aac cgg tac atc ccc aca gcc gcg gcc ttt ggt ggg ctg	500														
His Glu Leu Asn Arg Tyr Ile Pro Thr Ala Ala Ala Phe Gly Gly Leu															
115 120 125															
tgc atc ggg gcc ctc tgc gtc ctg gct gac ttc cta ggc gcc att ggg	548														
Cys Ile Gly Ala Leu Ser Val Leu Ala Asp Phe Leu Gly Ala Ile Gly															
130 135 140 145															
tct gga acc ggg atc ctg ctc gca gtc aca atc atc tac cag tac ttt	596														
Ser Gly Thr Gly Ile Leu Leu Ala Val Thr Ile Ile Tyr Gln Tyr Phe															
150 155 160															
gag atc ttc gtt aag gag caa agc gag gtt ggc agc atg ggg gcc ctg	644														
Glu Ile Phe Val Lys Glu Gln Ser Glu Val Gly Ser Met Gly Ala Leu															
165 170 175															
ctc ttc tgagcccgtc tcccggacag gttgaggaag ctgctccaga agcgccctcg	700														
Leu Phe															
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gaatttcgta ttctttcatt ccactgtgta aagtgtaga cattttccaa tttaaaattt	820														
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cagagaagtg ggaatggtat aggattgtcc ccaagtgtcc atgtaacttt tgttttaacc	940														
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<210> 27
 <211> 279
 <212> PRT
 <213> Homo sapiens

<400> 27
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 Pro Arg Ile Gln Gly Tyr Pro Leu Met Gly Ser Pro Leu Leu Met Thr
 20 25 30
 Ser Ile Leu Leu Thr Tyr Val Tyr Phe Val Leu Ser Leu Gly Pro Arg
 35 40 45
 Ile Met Ala Asn Arg Lys Pro Phe Gln Leu Arg Gly Phe Met Ile Val
 50 55 60
 Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr Ile Val Tyr Glu Phe
 65 70 75 80
 Leu Met Ser Gly Trp Leu Ser Thr Tyr Thr Trp Arg Cys Asp Pro Val
 85 90 95
 Asp Tyr Ser Asn Ser Pro Glu Ala Leu Arg Met Val Arg Val Ala Trp
 100 105 110
 Leu Phe Leu Phe Ser Lys Phe Ile Glu Leu Met Asp Thr Val Ile Phe
 115 120 125

Ile Leu Arg Lys Lys Asp Gly Gln Val Thr Phe Leu His Val Phe His
 130 135 140
 His Ser Val Leu Pro Trp Ser Trp Trp Trp Gly Val Lys Ile Ala Pro
 145 150 155 160
 Gly Gly Met Gly Ser Phe His Ala Met Ile Asn Ser Ser Val His Val
 165 170 175
 Ile Met Tyr Leu Tyr Tyr Gly Leu Ser Ala Phe Gly Pro Val Ala Gln
 180 185 190
 Pro Tyr Leu Trp Trp Lys Lys His Met Thr Ala Ile Gln Leu Ile Gln
 195 200 205
 Phe Val Leu Val Ser Leu His Ile Ser Gln Tyr Tyr Phe Met Ser Ser
 210 215 220
 Cys Asn Tyr Gln Tyr Pro Val Ile Ile His Leu Ile Trp Met Tyr Gly
 225 230 235 240
 Thr Ile Phe Phe Met Leu Phe Ser Asn Phe Trp Tyr His Ser Tyr Thr
 245 250 255
 Lys Gly Lys Arg Leu Pro Arg Ala Leu Gln Gln Asn Gly Ala Pro Gly
 260 265 270
 Ile Ala Lys Val Lys Ala Asn
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<210> 28
 <211> 1472
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (119)..(955)

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 atg gag gct gtt gtg aac ttg tac caa gag gtg atg aag cac gca gat 166
 Met Glu Ala Val Val Asn Leu Tyr Gln Glu Val Met Lys His Ala Asp
 1 5 10 15
 ccc cgg atc cag ggc tac cct ctg atg ggg tcc ccc ttg cta atg acc 214
 Pro Arg Ile Gln Gly Tyr Pro Leu Met Gly Ser Pro Leu Leu Met Thr
 20 25 30
 tcc att ctc ctg acc tac gtg tac ttc gtt ctc tca ctt ggg cct cgc 262
 Ser Ile Leu Leu Thr Tyr Val Tyr Phe Val Leu Ser Leu Gly Pro Arg
 35 40 45

atc atg gct aat cgg aag ccc ttc cag ctc cgt ggc ttc atg att gtc	310
Ile Met Ala Asn Arg Lys Pro Phe Gln Leu Arg Gly Phe Met Ile Val	
50 55 60	
tac aac ttc tca ctg gtg gca ctc tcc ctc tac att gtc tat gag ttc	358
Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr Ile Val Tyr Glu Phe	
65 70 75 80	
ctg atg tcg ggc tgg ctg agc acc tat acc tgg cgc tgt gac cct gtg	406
Leu Met Ser Gly Trp Leu Ser Thr Tyr Thr Trp Arg Cys Asp Pro Val	
85 90 95	
gac tat tcc aac agc cct gag gca ctt agg atg gtt cgg gtg gcc tgg	454
Asp Tyr Ser Asn Ser Pro Glu Ala Leu Arg Met Val Arg Val Ala Trp	
100 105 110	
ctc ttc ctc ttc tcc aag ttc att gag ctg atg gac aca gtg atc ttt	502
Leu Phe Leu Phe Ser Lys Phe Ile Glu Leu Met Asp Thr Val Ile Phe	
115 120 125	
att ctc cga aag aaa gac ggg cag gtg acc ttc cta cat gtc ttc cat	550
Ile Leu Arg Lys Lys Asp Gly Gln Val Thr Phe Leu His Val Phe His	
130 135 140	
cac tct gtg ctt ccc tgg agc tgg tgg tgg ggg gta aag att gcc ccg	598
His Ser Val Leu Pro Trp Ser Trp Trp Trp Gly Val Lys Ile Ala Pro	
145 150 155 160	
gga gga atg ggc tct ttc cat gcc atg ata aac tct tcc gtg cat gtc	646
Gly Gly Met Gly Ser Phe His Ala Met Ile Asn Ser Ser Val His Val	
165 170 175	
ata atg tac ctg tac tac gga tta tct gcc ttt ggc cct gtg gca caa	694
Ile Met Tyr Leu Tyr Tyr Gly Leu Ser Ala Phe Gly Pro Val Ala Gln	
180 185 190	
ccc tac ctt tgg tgg aaa aag cac atg aca gcc att cag ctg atc cag	742
Pro Tyr Leu Trp Trp Lys Lys His Met Thr Ala Ile Gln Leu Ile Gln	
195 200 205	
ttt gtc ctg gtc tca ctg cac atc tcc cag tac tac ttt atg tcc agc	790
Phe Val Leu Val Ser Leu His Ile Ser Gln Tyr Tyr Phe Met Ser Ser	
210 215 220	
tgt aac tac cag tac cca gtc att att cac ctc atc tgg atg tat ggc	838
Cys Asn Tyr Gln Tyr Pro Val Ile Ile His Leu Ile Trp Met Tyr Gly	
225 230 235 240	
acc atc ttc ttc atg ctg ttc tcc aac ttc tgg tat cac tct tat acc	886
Thr Ile Phe Phe Met Leu Phe Ser Asn Phe Trp Tyr His Ser Tyr Thr	
245 250 255	
aag ggc aag cgg ctg ccc cgt gca ctt cag caa aat gga gct cca ggt	934
Lys Gly Lys Arg Leu Pro Arg Ala Leu Gln Gln Asn Gly Ala Pro Gly	
260 265 270	
att gcc aag gtc aag gcc aac tgagaagcat ggccagata ggcccccacc	985

Ile Ala Lys Val Lys Ala Asn
275

taagtgcctc aggactgcac cttagggcag tgtccgtcag tgccctctcc acctacacct 1045
gtgaccaagg cttatgtggt caggactgag caggggactg gccctcccct cccacacagct 1105
gctctacagg gaccacggct ttggttcttc acccacttcc cccgggcagc tccagggatg 1165
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ggaaacc 1472

<210> 29
<211> 137
<212> PRT
<213> Homo sapiens

<400> 29
Met Gly Phe Gly Ala Thr Leu Ala Val Gly Leu Thr Ile Phe Val Leu
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Ser Val Val Thr Ile Ile Ile Cys Phe Thr Cys Ser Cys Cys Cys Leu
20 25 30
Tyr Lys Thr Cys Arg Arg Pro Arg Pro Val Val Thr Thr Thr Thr Ser
35 40 45
Thr Thr Val Val His Ala Pro Tyr Pro Gln Pro Pro Ser Val Pro Pro
50 55 60
Ser Tyr Pro Gly Pro Ser Tyr Gln Gly Tyr His Thr Met Pro Pro Gln
65 70 75 80
Pro Gly Met Pro Ala Ala Pro Tyr Pro Met Gln Tyr Pro Pro Pro Tyr
85 90 95
Pro Ala Gln Pro Met Gly Pro Pro Ala Tyr His Glu Thr Leu Ala Gly
100 105 110
Gly Ala Ala Ala Pro Tyr Pro Ala Ser Gln Pro Pro Tyr Asn Pro Ala
115 120 125
Tyr Met Asp Ala Pro Lys Ala Ala Leu
130 135

<210> 30

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<210> 31
 <211> 118
 <212> PRT
 <213> Homo sapiens

<400> 31
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 20 25 30
 Tyr Lys Thr Cys Arg Arg Pro Arg Pro Val Val Thr Thr Thr Thr Ser
 35 40 45
 Thr Thr Val Val His Ala Pro Tyr Pro Gln Pro Pro Ser Val Pro Pro
 50 55 60
 Ser Tyr Pro Gly Pro Ser Tyr Gln Gly Tyr His Thr Met Pro Pro Gln
 65 70 75 80
 Pro Gly Met Pro Ala Ala Pro Tyr Pro Met Gln Tyr Pro Pro Pro Tyr

	85	90	95	
Pro Ala Gln Pro Met Gly Pro Pro Ala Tyr His Glu Thr Leu Ala Gly	100	105	110	
Glu Cys Pro Cys Gln Leu	115			
<210> 32				
<211> 1908				
<212> DNA				
<213> Homo sapiens				
<220>				
<221> CDS				
<222> (91)..(444)				
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ggaggcctct ggggtgaaggc agaggctaac atg ggg ttc gga gcg acc ttg gcc	114			
Met Gly Phe Gly Ala Thr Leu Ala	1	5		
gtt ggc ctg acc atc ttt gtg ctg tct gtc gtc act atc atc atc tgc	162			
Val Gly Leu Thr Ile Phe Val Leu Ser Val Val Thr Ile Ile Ile Cys	10	15	20	
ttc acc tgc tcc tgc tgc tgc ctt tac aag acg tgc cgc cga cca cgt	210			
Phe Thr Cys Ser Cys Cys Cys Leu Tyr Lys Thr Cys Arg Arg Pro Arg	25	30	35	40
ccg gtt gtc acc acc acc aca tcc acc act gtg gtg cat gcc cct tat	258			
Pro Val Val Thr Thr Thr Thr Ser Thr Thr Val Val His Ala Pro Tyr	45	50	55	
cct cag cct cca agt gtg ccg ccc agc tac cct gga cca agc tac cag	306			
Pro Gln Pro Pro Ser Val Pro Pro Ser Tyr Pro Gly Pro Ser Tyr Gln	60	65	70	
ggc tac cac acc atg ccg cct cag cca ggg atg cca gca gca ccc tac	354			
Gly Tyr His Thr Met Pro Pro Gln Pro Gly Met Pro Ala Ala Pro Tyr	75	80	85	
cca atg cag tac cca cca cct tac cca gcc cag ccc atg ggc cca ccg	402			
Pro Met Gln Tyr Pro Pro Tyr Pro Ala Gln Pro Met Gly Pro Pro	90	95	100	
gcc tac cac gag acc ctg gct ggt gag tgc ccc tgc caa ctc	444			
Ala Tyr His Glu Thr Leu Ala Gly Glu Cys Pro Cys Gln Leu	105	110	115	
tagccctgcc cgacttcccg agtctctgcc agcatccctc gggcacccat cccaaactac	504			
atcactcaac aggcctctgc ccctttctgc ttgcctgcc ctcacagggc agcccaccat	564			

gctcacagcc aaccagggtc ctctctgctt tcaggaggag cagccgcgcc ctaccccgcc 624
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tggtatggcag ctctggccca gacatgaata cctcgtgttc ctctccctc tattactgtt 1824
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tttataataa atgcaatcgt ttgg 1908

<210> 33
<211> 168
<212> PRT
<213> Homo sapiens

<400> 33
Met Asn Ser Lys Gly Gln Tyr Pro Thr Gln Pro Thr Tyr Pro Val Gln
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Pro Pro Gly Asn Pro Val Tyr Pro Gln Thr Leu His Leu Pro Gln Ala

20 25 30

Pro Pro Tyr Thr Asp Ala Pro Pro Ala Tyr Ser Glu Leu Tyr Arg Pro
35 40 45

Ser Phe Val His Pro Gly Ala Ala Thr Val Pro Thr Met Ser Ala Ala
50 55 60

Phe Pro Gly Ala Ser Leu Tyr Leu Pro Met Ala Gln Ser Val Ala Val
65 70 75 80

Gly Pro Leu Gly Ser Thr Ile Pro Met Ala Tyr Tyr Pro Val Gly Pro
85 90 95

Ile Tyr Pro Pro Gly Ser Thr Val Leu Val Glu Gly Gly Tyr Asp Ala
100 105 110

Gly Ala Arg Phe Gly Ala Gly Ala Thr Ala Gly Asn Ile Pro Pro Pro
115 120 125

Pro Pro Gly Cys Pro Pro Asn Ala Ala Gln Leu Ala Val Met Gln Gly
130 135 140

Ala Asn Val Leu Val Thr Gln Arg Lys Gly Asn Phe Phe Met Gly Gly
145 150 155 160

Ser Asp Gly Gly Tyr Thr Ile Trp
165

<210> 34
<211> 1897
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (70)..(573)

<400> 34
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gcaaccacc atg aac agc aaa ggt caa tat cca aca cag cca acc tac cct 111
Met Asn Ser Lys Gly Gln Tyr Pro Thr Gln Pro Thr Tyr Pro
1 5 10

gtg cag cct cct ggg aat cca gta tac cct cag acc ttg cat ctt cct 159
Val Gln Pro Pro Gly Asn Pro Val Tyr Pro Gln Thr Leu His Leu Pro
15 20 25 30

cag gct cca ccc tat acc gat gct cca cct gcc tac tca gag ctc tat 207
Gln Ala Pro Pro Tyr Thr Asp Ala Pro Pro Ala Tyr Ser Glu Leu Tyr
35 40 45

cgt ccg agc ttt gtg cac cca ggg gct gcc aca gtc ccc acc atg tca 255
Arg Pro Ser Phe Val His Pro Gly Ala Ala Thr Val Pro Thr Met Ser
50 55 60

gcc gca ttt cct gga gcc tct ctg tat ctt ccc atg gcc cag tct gtc	303
Ala Ala Phe Pro Gly Ala Ser Leu Tyr Leu Pro Met Ala Gln Ser Val	
65 70 75	
gct gtt ggg cct tta ggt tcc aca atc ccc atg gct tat tat cca gtc	351
Ala Val Gly Pro Leu Gly Ser Thr Ile Pro Met Ala Tyr Tyr Pro Val	
80 85 90	
ggt ccc atc tat cca cct ggc tcc aca gtg ctg gtg gaa gga ggg tat	399
Gly Pro Ile Tyr Pro Pro Gly Ser Thr Val Leu Val Glu Gly Gly Tyr	
95 100 105 110	
gat gca ggt gcc aga ttt gga gct ggg gct act gct ggc aac att cct	447
Asp Ala Gly Ala Arg Phe Gly Ala Gly Ala Thr Ala Gly Asn Ile Pro	
115 120 125	
cct cca cct cct gga tgc cct ccc aat gct gct cag ctt gca gtc atg	495
Pro Pro Pro Pro Gly Cys Pro Pro Asn Ala Ala Gln Leu Ala Val Met	
130 135 140	
cag gga gcc aac gtc ctc gta act cag cgg aag ggg aac ttc ttc atg	543
Gln Gly Ala Asn Val Leu Val Thr Gln Arg Lys Gly Asn Phe Phe Met	
145 150 155	
ggt ggt tca gat ggt ggc tac acc atc tgg tgaggaacca aggccacctc	593
Gly Gly Ser Asp Gly Gly Tyr Thr Ile Trp	
160 165	
tgtgccggga aagacatcac ataccttcag cactttctcac aatgtaactg ctttagtcat	653
attaacctga agttgcagtt tagacacatg ttgttgggggt gtctttcttg tgcccaaact	713
ttcaggcact tttcaaattt aataaggaac catgtaatgg tagcagtacc tccctaaagc	773
attttgagggt aggggaggta tccattcata aaatgaatgt ggggtgaagcc gccctaagga	833
ttttccttta atttctcttg agtaatactg taccatactg gtctttgctt ttagtaataa	893
aacatcaaat taggtttgga gggaactttg atcttctctaa gaattaaagt tgccaaatta	953
ttctgattgg tctttaatct cctttaagtc tttgatatat attacttggt ataaatggaa	1013
cgcattagtt gtctgccttt tcctttccat cccttgcccc acccatccca tctccaaccc	1073
tagtcttcca tttcctcccg ccagtctcca ttgaatcaat ggtgcaggac agaaagccag	1133
tcagactaat ttccttcttt cctcgcactt ctccccactc gtcacttttt aactagtgtt	1193
tcacaaggat cctctgaaac cctctctgtg cccaagtac agatgccatt acttctgctt	1253
togtatctcc tcaggcaaaa gtggagggtg ccttatgggc cctcctcata ggttgtctct	1313
gcatacacga acctaaccga aatttgcttt ggtgccagaa aaactgagct atgtttgaac	1373
aaagatgtcg tgcaaaactgt actgtgaaca acagttgggt taaaatatga ggggcaagga	1433

ggaggatgca ttccaagaac ttgattgatg tgttcagagc taaaltaaga ggagttttca 1493
 gatcaaaaac tggttaccat tttttgtcag agtgtctgat gcggccactc attcgggtcc 1553
 ccagaattcc tagactgggt taatagggtc atattgtgaa tgtctcacta caaaatgact 1613
 tgagtccagt gaaatctcat tagggtttaa gaatatttca gggatcctta atgttttgat 1673
 ttttgttttc tgaaattgga ttttatttta ttttatctta taatttcagt tcatctaaat 1733
 tgtgtgttct gtacatgtga tgtttgactg taccattgac tgttatggaa gttcagcggt 1793
 gtatgtctct ctctacactg tgggtgcactt aacttggtga atttttatac taaaaatgta 1853
 gaataaagac ttttttgaag atttgaataa agtgatgaag ttgc 1897

<210> 35
 <211> 455
 <212> PRT
 <213> Homo sapiens

<400> 35
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 1 5 10 15
 Phe Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe Lys Asp
 20 25 30
 Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser Val Thr Phe
 35 40 45
 Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe Glu Ile Leu Gly
 50 55 60
 Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp Lys Met Asn Leu Cys
 65 70 75 80
 Val Ile Leu Leu Ile Leu Val Phe Met Val Pro Phe Tyr Ile Gly Tyr
 85 90 95
 Phe Ile Val Ser Asn Ile Arg Leu Leu His Lys Gln Arg Leu Leu Phe
 100 105 110
 Ser Cys Leu Leu Trp Leu Thr Phe Met Tyr Phe Phe Trp Lys Leu Gly
 115 120 125
 Asp Pro Phe Pro Ile Leu Ser Pro Lys His Gly Ile Leu Ser Ile Glu
 130 135 140
 Gln Leu Ile Ser Arg Val Gly Val Ile Gly Val Thr Leu Met Ala Leu
 145 150 155 160
 Leu Ser Gly Phe Gly Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr
 165 170 175
 Phe Leu Arg Asn Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg

180						185						190					
Leu	Leu	Gln	Thr	Met	Asp	Met	Ile	Ile	Ser	Lys	Lys	Lys	Arg	Met	Ala		
		195					200					205					
Met	Ala	Arg	Arg	Thr	Met	Phe	Gln	Lys	Gly	Glu	Val	His	Asn	Lys	Pro		
	210					215					220						
Ser	Gly	Phe	Trp	Gly	Met	Ile	Lys	Ser	Val	Thr	Thr	Ser	Ala	Ser	Gly		
225					230					235					240		
Ser	Glu	Asn	Leu	Thr	Leu	Ile	Gln	Gln	Glu	Val	Asp	Ala	Leu	Glu	Glu		
				245					250					255			
Leu	Ser	Arg	Gln	Leu	Phe	Leu	Glu	Thr	Ala	Asp	Leu	Tyr	Ala	Thr	Lys		
			260					265					270				
Glu	Arg	Ile	Glu	Tyr	Ser	Lys	Thr	Phe	Lys	Gly	Lys	Tyr	Phe	Asn	Phe		
		275					280					285					
Leu	Gly	Tyr	Phe	Phe	Ser	Ile	Tyr	Cys	Val	Trp	Lys	Ile	Phe	Met	Ala		
	290					295					300						
Thr	Ile	Asn	Ile	Val	Phe	Asp	Arg	Val	Gly	Lys	Thr	Asp	Pro	Val	Thr		
305					310					315					320		
Arg	Gly	Ile	Glu	Ile	Thr	Val	Asn	Tyr	Leu	Gly	Ile	Gln	Phe	Asp	Val		
				325					330					335			
Lys	Phe	Trp	Ser	Gln	His	Ile	Ser	Phe	Ile	Leu	Val	Gly	Ile	Ile	Ile		
			340				345					350					
Val	Thr	Ser	Ile	Arg	Gly	Leu	Leu	Ile	Thr	Leu	Thr	Lys	Phe	Phe	Tyr		
		355					360					365					
Ala	Ile	Ser	Ser	Ser	Lys	Ser	Ser	Asn	Val	Ile	Val	Leu	Leu	Leu	Ala		
	370					375					380						
Gln	Ile	Met	Gly	Met	Tyr	Phe	Val	Ser	Ser	Val	Leu	Leu	Ile	Arg	Met		
385					390					395				400			
Ser	Met	Pro	Leu	Glu	Tyr	Arg	Thr	Ile	Ile	Thr	Glu	Val	Leu	Gly	Glu		
			405					410						415			
Leu	Gln	Phe	Asn	Phe	Tyr	His	Arg	Trp	Phe	Asp	Val	Ile	Phe	Leu	Val		
			420				425					430					
Ser	Ala	Leu	Ser	Ser	Ile	Leu	Phe	Leu	Tyr	Leu	Ala	His	Lys	Gln	Ala		
		435					440					445					
Pro	Glu	Lys	Gln	Met	Ala	Pro											
	450					455											

<210> 36
 <211> 1903
 <212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (116)..(1480)

<400> 36

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tgctgtggcc tcggggagtg ggaagtggag gcaggagcct tccttacact tcgcc atg 118
Met
1

agt ttc ctc atc gac tcc agc atc atg att acc tcc cag ata cta ttt 166
Ser Phe Leu Ile Asp Ser Ser Ile Met Ile Thr Ser Gln Ile Leu Phe
5 10 15

ttt gga ttt ggg tgg ctt ttc ttc atg cgc caa ttg ttt aaa gac tat 214
Phe Gly Phe Gly Trp Leu Phe Phe Met Arg Gln Leu Phe Lys Asp Tyr
20 25 30

gag ata cgt cag tat gtt gta cag gtg atc ttc tcc gtg acg ttt gca 262
Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser Val Thr Phe Ala
35 40 45

ttt tct tgc acc atg ttt gag ctc atc atc ttt gaa atc tta gga gta 310
Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe Glu Ile Leu Gly Val
50 55 60 65

ttg aat agc agc tcc cgt tat ttt cac tgg aaa atg aac ctg tgt gta 358
Leu Asn Ser Ser Ser Arg Tyr Phe His Trp Lys Met Asn Leu Cys Val
70 75 80

att ctg ctg atc ctg gtt ttc atg gtg cct ttt tac att ggc tat ttt 406
Ile Leu Leu Ile Leu Val Phe Met Val Pro Phe Tyr Ile Gly Tyr Phe
85 90 95

att gtg agc aat atc cga cta ctg cat aaa caa cga ctg ctt ttt tcc 454
Ile Val Ser Asn Ile Arg Leu Leu His Lys Gln Arg Leu Leu Phe Ser
100 105 110

tgt ctc tta tgg ctg acc ttt atg tat ttc ttc tgg aaa cta gga gat 502
Cys Leu Leu Trp Leu Thr Phe Met Tyr Phe Phe Trp Lys Leu Gly Asp
115 120 125

ccc ttt ccc att ctc agc cca aaa cat ggg atc tta tcc ata gaa cag 550
Pro Phe Pro Ile Leu Ser Pro Lys His Gly Ile Leu Ser Ile Glu Gln
130 135 140 145

ctc atc agc cgg gtt ggt gtg att gga gtg act ctc atg gct ctt ctt 598
Leu Ile Ser Arg Val Gly Val Ile Gly Val Thr Leu Met Ala Leu Leu
150 155 160

tct gga ttt ggt gct gtc aac tgc cca tac act tac atg tct tac ttc 646
Ser Gly Phe Gly Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr Phe
165 170 175

ctc agg aat gtg act gac acg gat att cta gcc ctg gaa cgg cga ctg	694
Leu Arg Asn Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg Leu	
180 185 190	
ctg caa acc atg gat atg atc ata agc aaa aag aaa agg atg gca atg	742
Leu Gln Thr Met Asp Met Ile Ile Ser Lys Lys Lys Arg Met Ala Met	
195 200 205	
gca cgg aga aca atg ttc cag aag ggg gaa gtg cat aac aaa cca tca	790
Ala Arg Arg Thr Met Phe Gln Lys Gly Glu Val His Asn Lys Pro Ser	
210 215 220 225	
ggg ttc tgg gga atg ata aaa agt gtt acc act tca gca tca gga agt	838
Gly Phe Trp Gly Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly Ser	
230 235 240	
gaa aat ctt act ctt att caa cag gaa gtg gat gct ttg gaa gaa tta	886
Glu Asn Leu Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu Glu Leu	
245 250 255	
agc agg cag ctt ttt ctg gaa aca gct gat cta tat gct acc aag gag	934
Ser Arg Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala Thr Lys Glu	
260 265 270	
aga ata gaa tac tcc aaa acc ttc aag ggg aaa tat ttt aat ttt ctt	982
Arg Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr Phe Asn Phe Leu	
275 280 285	
ggg tac ttt ttc tct att tac tgt gtt tgg aaa att ttc atg gct acc	1030
Gly Tyr Phe Phe Ser Ile Tyr Cys Val Trp Lys Ile Phe Met Ala Thr	
290 295 300 305	
atc aat att gtt ttt gat cga gtt ggg aaa acg gat cct gtc aca aga	1078
Ile Asn Ile Val Phe Asp Arg Val Gly Lys Thr Asp Pro Val Thr Arg	
310 315 320	
ggc att gag atc act gtg aat tat ctg gga atc caa ttt gat gtg aag	1126
Gly Ile Glu Ile Thr Val Asn Tyr Leu Gly Ile Gln Phe Asp Val Lys	
325 330 335	
ttt tgg tcc caa cac att tcc ttc att ctt gtt gga ata atc atc gtc	1174
Phe Trp Ser Gln His Ile Ser Phe Ile Leu Val Gly Ile Ile Ile Val	
340 345 350	
aca tcc atc aga gga ttg ctg atc act ctt acc aag ttc ttt tat gcc	1222
Thr Ser Ile Arg Gly Leu Leu Ile Thr Leu Thr Lys Phe Phe Tyr Ala	
355 360 365	
atc tct agc agt aag tcc tcc aat gtc att gtc ctg cta tta gca cag	1270
Ile Ser Ser Ser Lys Ser Ser Asn Val Ile Val Leu Leu Leu Ala Gln	
370 375 380 385	
ata atg ggc atg tac ttt gtc tcc tct gtg ctg ctg atc cga atg agt	1318
Ile Met Gly Met Tyr Phe Val Ser Ser Val Leu Leu Ile Arg Met Ser	
390 395 400	
atg cct tta gaa tac cgc acc ata atc act gaa gtc ctt gga gaa ctg	1366

Met Pro Leu Glu Tyr Arg Thr Ile Ile Thr Glu Val Leu Gly Glu Leu
405 410 415

cag ttc aac ttc tat cac cgt tgg ttt gat gtg atc ttc ctg gtc agc 1414
Gln Phe Asn Phe Tyr His Arg Trp Phe Asp Val Ile Phe Leu Val Ser
420 425 430

gct ctc tct agc ata ctc ttc ctc tat ttg gct cac aaa cag gca cca 1462
Ala Leu Ser Ser Ile Leu Phe Leu Tyr Leu Ala His Lys Gln Ala Pro
435 440 445

gag aag caa atg gca cct tgaacttaag cctactacag actgtagag 1510
Glu Lys Gln Met Ala Pro
450 455

gccagtgggtt tcaaaattta gatataagag gggggaaaaa tggaaccagg gcctgacatt 1570

ttataaaciaa acaaaatgct atggtagcat ttttcacctt catagcatac tccttccccg 1630

tcaggtgata ctatgaccat gagtagcatc agccagaaca tgagagggag aactaactca 1690

agacaatact cagcagagag catcccggtg ggatatgagg ctggtgtaga ggcggagagg 1750

agccaagaaa ctaaagggtga aaaatacact ggaactctgg ggcaagacat gtctatggta 1810

gctgagccaa acacgtagga tttccgtttt aaggttcaca tggaagagg ttagctttg 1870

ccttgagatt gactcattaa aatcagagac tgt 1903

<210> 37
<211> 322
<212> PRT
<213> Homo sapiens

<400> 37
Met Ser Ser Leu Gly Gly Gly Ser Gln Asp Ala Gly Gly Ser Ser Ser
1 5 10 15

Ser Ser Thr Asn Gly Ser Gly Gly Ser Gly Ser Ser Gly Pro Lys Ala
20 25 30

Gly Ala Ala Asp Lys Ser Ala Val Val Ala Ala Ala Ala Pro Ala Ser
35 40 45

Val Ala Asp Asp Thr Pro Pro Pro Glu Arg Arg Asn Lys Ser Gly Ile
50 55 60

Ile Ser Glu Pro Leu Asn Lys Ser Leu Arg Arg Ser Arg Pro Leu Ser
65 70 75 80

His Tyr Ser Ser Phe Gly Ser Ser Gly Gly Ser Gly Gly Gly Ser Met
85 90 95

Met Gly Gly Glu Ser Ala Asp Lys Ala Thr Ala Ala Ala Ala Ala Ala
100 105 110

[illegible]

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<210> 38
<211> 1448
<212> DNA
<213> Homo sapiens
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<220>
<221> CDS
<222> (292)..(1257)
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<400> 38  
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tcggagagccc gagtgaagac atttccacct ggacacctga ccatgtgcct gccctgagca 180
gcgaggcccca ccaggcatct ctgttggtggg cagcagggcc aggtcctggt ctgtggaccc 240
tcggcagttg gcaggetccc tctgcagtgg ggtctggggc tcggccccac c atg tcg 297
Met Ser
1
agc ctc ggc ggt ggc tcc cag gat gcc ggc ggc agt agc agc agc agc 345
Ser Leu Gly Gly Gly Ser Gln Asp Ala Gly Gly Ser Ser Ser Ser Ser
5 10 15
acc aat ggc agc ggt ggc agt ggc agc agt ggc cca aag gca gga gca 393
Thr Asn Gly Ser Gly Gly Ser Gly Ser Ser Gly Pro Lys Ala Gly Ala
20 25 30
gca gac aag agt gca gtg gtg gct gcc gcc gca cca gcc tca gtg gca 441
Ala Asp Lys Ser Ala Val Val Ala Ala Ala Pro Ala Ser Val Ala
35 40 45 50
gat gac aca cca ccc ccc gag cgt cgg aac aag agc ggt atc atc agt 489
Asp Asp Thr Pro Pro Pro Glu Arg Arg Asn Lys Ser Gly Ile Ile Ser
55 60 65
gag ccc ctc aac aag agc ctg cgc cgc tcc cgc ccg ctc tcc cac tac 537
Glu Pro Leu Asn Lys Ser Leu Arg Arg Ser Arg Pro Leu Ser His Tyr
70 75 80
tct tct ttt ggc agc agt ggt ggt agt ggc ggt ggc agc atg atg ggc 585
Ser Ser Phe Gly Ser Ser Gly Gly Ser Gly Gly Gly Ser Met Met Gly
85 90 95
gga gag tct gct gac aag gcc act gcg gct gca gcc gct gcc tcc ctg 633
Gly Glu Ser Ala Asp Lys Ala Thr Ala Ala Ala Ala Ala Ala Ser Leu
100 105 110
ttg gcc aat ggg cat gac ctg gcg gcg gcc atg gcg gtg gac aaa agc 681
Leu Ala Asn Gly His Asp Leu Ala Ala Ala Met Ala Val Asp Lys Ser
115 120 125 130
aac cct acc tca aag cac aaa agt ggt gct gtg gcc agc ctg ctg agc 729
Asn Pro Thr Ser Lys His Lys Ser Gly Ala Val Ala Ser Leu Leu Ser
135 140 145
aag gca gag cgg gcc acg gag ctg gca gcc gag gga cag ctg acg ctg 777
Lys Ala Glu Arg Ala Thr Glu Leu Ala Ala Glu Gly Gln Leu Thr Leu
150 155 160
cag cag ttt gcg cag tcc aca gag atg ctg aag cgc gtg gtg cag gag 825
Gln Gln Phe Ala Gln Ser Thr Glu Met Leu Lys Arg Val Val Gln Glu
165 170 175
cat ctc ccg ctg atg agc gag gcg ggt gct ggc ctg cct gac atg gag 873
His Leu Pro Leu Met Ser Glu Ala Gly Ala Gly Leu Pro Asp Met Glu
180 185 190
gct gtg gca ggt gcc gaa gcc ctc aat ggc cag tcc gac ttc ccc tac 921

DOUGLAS BROWN

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<210> 39
<211> 313
<212> PRT
<213> Homo sapiens
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<400> 39
Met Ala Gly Gln Pro Gly His Met Pro His Gly Gly Ser Ser Asn Asn
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Leu Cys His Thr Leu Gly Pro Val His Pro Pro Asp Pro Gln Arg His
20 25 30
Pro Asn Thr Leu Ser Phe Arg Cys Ser Leu Ala Asp Phe Gln Ile Glu
35 40 45
Lys Lys Ile Gly Arg Gly Gln Phe Ser Glu Val Tyr Lys Ala Thr Cys
50 55 60

Leu Leu Asp Arg Lys Thr Val Ala Leu Lys Lys Val Gln Ile Phe Glu
65 70 75 80

Met Met Asp Ala Lys Ala Arg Gln Asp Cys Val Lys Glu Ile Gly Leu
85 90 95

Leu Lys Gln Leu Asn His Pro Asn Ile Ile Lys Tyr Leu Asp Ser Phe
100 105 110

Ile Glu Asp Asn Glu Leu Asn Ile Val Leu Glu Leu Ala Asp Ala Gly
115 120 125

Asp Leu Ser Gln Met Ile Lys Tyr Phe Lys Lys Gln Lys Arg Leu Ile
130 135 140

Pro Glu Arg Thr Val Trp Lys Tyr Phe Val Gln Leu Cys Ser Ala Val
145 150 155 160

Glu His Met His Ser Arg Arg Val Met His Arg Asp Ile Lys Pro Ala
165 170 175

Asn Val Phe Ile Thr Ala Thr Gly Val Val Lys Leu Gly Asp Leu Gly
180 185 190

Leu Gly Arg Phe Phe Ser Ser Glu Thr Thr Ala Ala His Ser Leu Val
195 200 205

Gly Thr Pro Tyr Tyr Met Ser Pro Glu Arg Ile His Glu Asn Gly Tyr
210 215 220

Asn Phe Lys Ser Asp Ile Trp Ser Leu Gly Cys Leu Leu Tyr Glu Met
225 230 235 240

Ala Ala Leu Gln Ser Pro Phe Tyr Gly Asp Lys Met Asn Leu Phe Ser
245 250 255

Leu Cys Gln Lys Ile Glu Gln Cys Asp Tyr Pro Pro Leu Pro Gly Glu
260 265 270

His Tyr Ser Glu Lys Leu Arg Glu Leu Val Ser Met Cys Ile Cys Pro
275 280 285

Asp Pro His Gln Arg Pro Asp Ile Gly Tyr Val His Gln Val Ala Lys
290 295 300

Gln Met His Ile Trp Met Ser Ser Thr
305 310

<210> 40
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<212> DNA
<213> Homo sapiens

<220>
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<222> (153)..(1091)

<400> 40

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ctccagccgc ccgcggggcca gcgcaccggt cccccagcgg cagccgagcc cgcccgcgcg 120

ccgttcgtgc cctcgtgagg ctggcatgca gg atg gca gga cag ccc ggc cac 173
                               Met Ala Gly Gln Pro Gly His
                               1                               5

atg ccc cat gga ggg agt tcc aac aac ctc tgc cac acc ctg ggg cct 221
Met Pro His Gly Gly Ser Ser Asn Asn Leu Cys His Thr Leu Gly Pro
          10                               15                               20

gtg cat cct cct gac cca cag agg cat ccc aac acg ctg tct ttt cgc 269
Val His Pro Pro Asp Pro Gln Arg His Pro Asn Thr Leu Ser Phe Arg
          25                               30                               35

tgc tcg ctg gcg gac ttc cag atc gaa aag aag ata ggc cga gga cag 317
Cys Ser Leu Ala Asp Phe Gln Ile Glu Lys Lys Ile Gly Arg Gly Gln
          40                               45                               50                               55

ttc agc gag gtg tac aag gcc acc tgc ctg ctg gac agg aag aca gtg 365
Phe Ser Glu Val Tyr Lys Ala Thr Cys Leu Leu Asp Arg Lys Thr Val
          60                               65                               70

gct ctg aag aag gtg cag atc ttt gag atg atg gac gcc aag gcg agg 413
Ala Leu Lys Lys Val Gln Ile Phe Glu Met Met Asp Ala Lys Ala Arg
          75                               80                               85

cag gac tgt gtc aag gag atc ggc ctc ttg aag caa ctg aac cac cca 461
Gln Asp Cys Val Lys Glu Ile Gly Leu Leu Lys Gln Leu Asn His Pro
          90                               95                               100

aat atc atc aag tat ttg gac tcg ttt atc gaa gac aac gag ctg aac 509
Asn Ile Ile Lys Tyr Leu Asp Ser Phe Ile Glu Asp Asn Glu Leu Asn
          105                               110                               115

att gtg ctg gag ttg gct gac gca ggg gac ctc tcg cag atg atc aag 557
Ile Val Leu Glu Leu Ala Asp Ala Gly Asp Leu Ser Gln Met Ile Lys
          120                               125                               130                               135

tac ttt aag aag cag aag cgg ctc atc ccg gag agg aca gta tgg aag 605
Tyr Phe Lys Lys Gln Lys Arg Leu Ile Pro Glu Arg Thr Val Trp Lys
          140                               145                               150

tac ttt gtg cag ctg tgc agc gcc gtg gag cac atg cat tca cgc cgg 653
Tyr Phe Val Gln Leu Cys Ser Ala Val Glu His Met His Ser Arg Arg
          155                               160                               165

gtg atg cac cga gac atc aag cct gcc aac gtg ttc atc aca gcc acg 701
Val Met His Arg Asp Ile Lys Pro Ala Asn Val Phe Ile Thr Ala Thr
          170                               175                               180

ggc gtc gtg aag ctc ggt gac ctt ggt ctg ggc cgc ttc ttc agc tct 749
Gly Val Val Lys Leu Gly Asp Leu Gly Leu Gly Arg Phe Phe Ser Ser

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185	190	195	
gag acc acc gca gcc cac tcc cta gtg ggg acg ccc tac tac atg tca			797
Glu Thr Thr Ala Ala His Ser Leu Val Gly Thr Pro Tyr Tyr Met Ser			
200	205	210	215
ccg gag agg atc cat gag aac ggc tac aac ttc aag tcc gac atc tgg			845
Pro Glu Arg Ile His Glu Asn Gly Tyr Asn Phe Lys Ser Asp Ile Trp			
	220	225	230
tcc ttg ggc tgt ctg ctg tac gag atg gca gcc ctc cag agc ccc ttc			893
Ser Leu Gly Cys Leu Leu Tyr Glu Met Ala Ala Leu Gln Ser Pro Phe			
	235	240	245
tat gga gat aag atg aat ctc ttc tcc ctg tgc cag aag atc gag cag			941
Tyr Gly Asp Lys Met Asn Leu Phe Ser Leu Cys Gln Lys Ile Glu Gln			
	250	255	260
tgt gac tac ccc cca ctc ccc ggg gag cac tac tcc gag aag tta cga			989
Cys Asp Tyr Pro Pro Leu Pro Gly Glu His Tyr Ser Glu Lys Leu Arg			
	265	270	275
gaa ctg gtc agc atg tgc atc tgc cct gac ccc cac cag aga cct gac			1037
Glu Leu Val Ser Met Cys Ile Cys Pro Asp Pro His Gln Arg Pro Asp			
280	285	290	295
atc gga tac gtg cac cag gtg gcc aag cag atg cac atc tgg atg tcc			1085
Ile Gly Tyr Val His Gln Val Ala Lys Gln Met His Ile Trp Met Ser			
	300	305	310
agc acc tgagcgtgga tgcaccgtgc cttatcaaag ccagcaccac tttgccttac			1141
Ser Thr			
ttgagtcgtc ttctotttoga gtggccacct ggtagcctag aacagctaag accacagggt			1201
tcagcaggtt ccccaaaagg ctgcccagcc ttacagcaga tgctgaaggc agagcagctg			1261
agggaggggc gctggccaca tgtcactgat ggtcagattc caaagtcctt tctttatact			1321
gttgtggaca atctcagctg ggtcaataag ggcagggtgt tccagcgagcc acggcagccc			1381
cctgtatctg gattgtaatg tgaatcttta gggtaatcc tccagtgacc tgtcaaggct			1441
tatgctaaca ggagacttgc aggagaccgt gtgatttgtg tagtgagcct ttgaaaatgg			1501
ttagtaccgg gttcagttta gttcttggta tcttttcaat caagctgtgt gcttaattta			1561
ctctgttgta aagggataaa gtggaaatca tttttt			1597
<p><210> 41</p> <p><211> 371</p> <p><212> PRT</p> <p><213> Homo sapiens</p> <p><400> 41</p> <p>Met Ser His Glu Lys Ser Phe Leu Val Ser Gly Asp Asn Tyr Pro Pro</p>			

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Ala Gln Pro Pro Tyr Pro Gly Ala Pro Tyr Pro Gln Pro Pro Phe Gln	35	40	45
Pro Ser Pro Tyr Gly Gln Pro Gly Tyr Pro His Gly Pro Ser Pro Tyr	50	55	60
Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Gly Tyr Pro	65	70	75
Gln Gly Pro Tyr Pro Gln Glu Gly Tyr Pro Gln Gly Pro Tyr Pro Gln	85	90	95
Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Ser Pro Phe Pro Pro Asn	100	105	110
Pro Tyr Gly Gln Pro Gln Val Phe Pro Gly Gln Asp Pro Asp Ser Pro	115	120	125
Gln His Gly Asn Tyr Gln Glu Glu Gly Pro Pro Ser Tyr Tyr Asp Asn	130	135	140
Gln Asp Phe Pro Ala Thr Asn Trp Asp Asp Lys Ser Ile Arg Gln Ala	145	150	155
Phe Ile Arg Lys Val Phe Leu Val Leu Thr Leu Gln Leu Ser Val Thr	165	170	175
Leu Ser Thr Val Ser Val Phe Thr Phe Val Ala Glu Val Lys Gly Phe	180	185	190
Val Arg Glu Asn Val Trp Thr Tyr Tyr Val Ser Tyr Ala Val Phe Phe	195	200	205
Ile Ser Leu Ile Val Leu Ser Cys Cys Gly Asp Phe Arg Arg Lys His	210	215	220
Pro Trp Asn Leu Val Ala Leu Ser Val Leu Thr Ala Ser Leu Ser Tyr	225	230	235
Met Val Gly Met Ile Ala Ser Phe Tyr Asn Thr Glu Ala Val Ile Met	245	250	255
Ala Val Gly Ile Thr Thr Ala Val Cys Phe Thr Val Val Ile Phe Ser	260	265	270
Met Gln Thr Arg Tyr Asp Phe Thr Ser Cys Met Gly Val Leu Leu Val	275	280	285
Ser Met Val Val Leu Phe Ile Phe Ala Ile Leu Cys Ile Phe Ile Arg	290	295	300
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<210> 42
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<213> Homo sapiens
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Met Ser His Glu Lys Ser Phe Leu																	
1 5																	
gtg tct ggg gac aac tat cct ccc ccc aac cct gga tat ccg ggg ggg																	162
Val Ser Gly Asp Asn Tyr Pro Pro Pro Asn Pro Gly Tyr Pro Gly Gly																	
10 15 20																	
ccc cag cca ccc atg ccc ccc tat gct cag cct ccc tac cct ggg gcc																	210
Pro Gln Pro Pro Met Pro Pro Tyr Ala Gln Pro Pro Tyr Pro Gly Ala																	
25 30 35 40																	
cct tac cca cag ccc cct ttc cag ccc tcc ccc tac ggt cag cca ggg																	258
Pro Tyr Pro Gln Pro Pro Phe Gln Pro Ser Pro Tyr Gly Gln Pro Gly																	
45 50 55																	
tac ccc cat ggc ccc agc ccc tac ccc caa ggg ggc tac cca cag ggt																	306
Tyr Pro His Gly Pro Ser Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly																	
60 65 70																	
ccc tac ccc caa ggg ggc tac cca cag ggc ccc tac cca caa gag ggc																	354
Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr Pro Gln Glu Gly																	
75 80 85																	
tac cca cag ggc ccc tac ccc caa ggg ggc tac ccc cag ggg cca tat																	402
Tyr Pro Gln Gly Pro Tyr Pro Gln Gly Gly Tyr Pro Gln Gly Pro Tyr																	
90 95 100																	
ccc cag agc ccc ttc ccc ccc aac ccc tat gga cag cca cag gtc ttc																	450
Pro Gln Ser Pro Phe Pro Pro Asn Pro Tyr Gly Gln Pro Gln Val Phe																	

105	110	115	120	
cca gga caa gac cct gac tca ccc cag cat gga aac tac cag gag gag				498
Pro Gly Gln Asp	Pro Asp Ser Pro Gln His	Gly Asn Tyr Gln Glu Glu		
	125	130	135	
ggt ccc cca tcc tac tat gac aac cag gac ttc cct gcc acc aac tgg				546
Gly Pro Pro Ser Tyr Tyr Asp Asn Gln Asp Phe Pro Ala Thr Asn Trp				
	140	145	150	
gat gac aag agc atc cga cag gcc ttc atc cgc aag gtg ttc cta gtg				594
Asp Asp Lys Ser Ile Arg Gln Ala Phe Ile Arg Lys Val Phe Leu Val				
	155	160	165	
ctg acc ttg cag ctg tcg gtg acc ctg tcc acg gtg tct gtg ttc act				642
Leu Thr Leu Gln Leu Ser Val Thr Leu Ser Thr Val Ser Val Phe Thr				
	170	175	180	
ttt gtt gcg gag gtg aag ggc ttt gtc cgg gag aat gtc tgg acc tac				690
Phe Val Ala Glu Val Lys Gly Phe Val Arg Glu Asn Val Trp Thr Tyr				
	185	190	195	200
tat gtc tcc tat gct gtc ttc ttc atc tct ctc atc gtc ctc agc tgt				738
Tyr Val Ser Tyr Ala Val Phe Phe Ile Ser Leu Ile Val Leu Ser Cys				
	205	210	215	
tgt ggg gac ttc cgg cga aag cac ccc tgg aac ctt gtt gca ctg tcg				786
Cys Gly Asp Phe Arg Arg Lys His Pro Trp Asn Leu Val Ala Leu Ser				
	220	225	230	
gtc ctg acc gcc agc ctg tcg tac atg gtg ggg atg atc gcc agc ttc				834
Val Leu Thr Ala Ser Leu Ser Tyr Met Val Gly Met Ile Ala Ser Phe				
	235	240	245	
tac aac acc gag gca gtc atc atg gcc gtg ggc atc acc aca gcc gtc				882
Tyr Asn Thr Glu Ala Val Ile Met Ala Val Gly Ile Thr Thr Ala Val				
	250	255	260	
tgc ttc acc gtc gtc atc ttc tcc atg cag acc cgc tac gac ttc acc				930
Cys Phe Thr Val Val Ile Phe Ser Met Gln Thr Arg Tyr Asp Phe Thr				
	265	270	275	280
tca tgc atg ggc gtg ctc ctg gtg agc atg gtg gtg ctc ttc atc ttc				978
Ser Cys Met Gly Val Leu Leu Val Ser Met Val Val Leu Phe Ile Phe				
	285	290	295	
gcc att ctc tgc atc ttc atc cgg aac cgc atc ctg gag atc gtg tac				1026
Ala Ile Leu Cys Ile Phe Ile Arg Asn Arg Ile Leu Glu Ile Val Tyr				
	300	305	310	
gcc tca ctg ggc gct ctg ctc ttc acc tgc ttc ctc gca gtg gac acc				1074
Ala Ser Leu Gly Ala Leu Leu Phe Thr Cys Phe Leu Ala Val Asp Thr				
	315	320	325	
cag ctg ctg ctg ggg aac aag cag ctg tcc ctg agc cca gaa gag tat				1122
Gln Leu Leu Leu Gly Asn Lys Gln Leu Ser Leu Ser Pro Glu Glu Tyr				
	330	335	340	

gtg ttt gct gcg ctg aac ctg tac aca gac atc atc aac atc ttc ctg 1170
Val Phe Ala Ala Leu Asn Leu Tyr Thr Asp Ile Ile Asn Ile Phe Leu
345 350 355 360

tac atc ctc acc atc att ggc cgc gcc aag gag tagccgagct ccagctcgct 1223
Tyr Ile Leu Thr Ile Ile Gly Arg Ala Lys Glu
365 370

gtgcccgcctc aggtggcacg gctggcctgg accctgcccc tggcacggca gtgccagctg 1283
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tgggatttgc tctctgcc 1781

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<211> 393
<212> PRT
<213> Homo sapiens

<400> 43
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35 40 45
Arg Cys Leu Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu
50 55 60
Gln Ser Arg Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr
65 70 75 80
Leu Arg Leu Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg
85 90 95
Gln Gly Leu Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met
100 105 110

Glu Gly Ala Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg 115 120 125
Lys Ala Gly Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln 130 135 140
Glu Glu Val Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala 145 150 155 160
Met Thr Phe Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala 165 170 175
Tyr Met Val Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val 180 185 190
Leu Val His Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu 195 200 205
Cys Arg Thr Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser 210 215 220
Lys His Glu Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr 225 230 235 240
His Thr Thr Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly 245 250 255
Val Asp Ile Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly 260 265 270
Tyr Asn Leu Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala 275 280 285
Asn Leu Leu Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr 290 295 300
Trp Trp Asn Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn 305 310 315 320
Arg Ala Val Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu 325 330 335
Leu Val Ser Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly 340 345 350
His Ile Lys Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala 355 360 365
Asp Ala Met Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu 370 375 380
Leu Val Pro Gly Pro Glu Lys Glu Asn 385 390

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<212> DNA

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<220>

<221> CDS

<222> (50)..(1228)

<400> 44

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 Glu Arg Glu Val Ala Glu Ala Ala Thr Gly Glu Asp Ala Ser Ser Pro
 5 10 15

cct ccg aaa acc gag gca gcg agc gac ccc cag cat ccc gcg gcc tcc 154
 Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro Ala Ala Ser
 20 25 30 35

gaa ggg gcc gcc gcc gcc gcc gcc tcc ccg cca ctg ctg cgc tgc cta 202
 Glu Gly Ala Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu Arg Cys Leu
 40 45 50

gtg ctc acc ggc ttt gga ggc tac gac aag gtg aag ctg cag agc ccg 250
 Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu Gln Ser Arg
 55 60 65

ccg gca gcg ccc ccg gcc cct ggg ccc ggc cag ctg acg ctg cgt ctg 298
 Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr Leu Arg Leu
 70 75 80

cgg gcc tgc ggg ctc aac ttc gca gac ctc atg gct agg cag ggg ctg 346
 Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg Gln Gly Leu
 85 90 95

tac gac cgt ctc ccg cct ctg cct gtc act ccg ggc atg gag ggc gcg 394
 Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met Glu Gly Ala
 100 105 110 115

ggt gtt gtg atc gca gtg ggc gag gga gtc agc gac cgc aag gca gga 442
 Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg Lys Ala Gly
 120 125 130

gac cgg gtg atg gtg ttg aac cgg tca ggg atg tgg cag gaa gag gtg 490
 Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln Glu Glu Val
 135 140 145

act gtg ccc tcg gtc cag acc ttc ctg att cct gag gcc atg acc ttt 538
 Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala Met Thr Phe
 150 155 160

gag gaa gct gct gcc ttg ctc gtc aat tac att aca gcc tac atg gtc 586
 Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala Tyr Met Val
 165 170 175

ctc ttt gac ttc ggc aac cta cag cct ggc cac agc gtc ttg gta cac 634

Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val Leu Val His
 180 185 190 195
 atg gct gca ggg ggt gtg ggt atg gct gcc gtg cag ctg tgc cgt aca 682
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 Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser Lys His Glu
 215 220 225
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 230 235 240
 gac tac gtg gat gag atc aag aag att tcc cct aaa gga gtg gac att 826
 Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly Val Asp Ile
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 gtc atg gac cct ctg ggt ggg tca gat act gcc aag ggc tac aac ctc 874
 Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly Tyr Asn Leu
 260 265 270 275
 ctg aaa ccc atg ggc aaa gtc gtc acc tat gga atg gcc aac ctg ctg 922
 Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala Asn Leu Leu
 280 285 290
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 Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr Trp Trp Asn
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 Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn Arg Ala Val
 310 315 320
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 Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu Leu Val Ser
 325 330 335
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 Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly His Ile Lys
 340 345 350 355
 ccc cac att gac tca gtc tgg ccc ttc gag aag gtg gct gat gcc atg 1162
 Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala Asp Ala Met
 360 365 370
 aaa cag atg cag gag aag aag aat gtg ggc aag gtc ctc ctg gtt cca 1210
 Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu Leu Val Pro
 375 380 385
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 Gly Pro Glu Lys Glu Asn
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<210> 45
 <211> 393
 <212> PRT
 <213> Homo sapiens

<400> 45
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 Ser Ser Pro Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro
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 Ala Ala Ser Glu Gly Ala Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu
 35 40 45
 Arg Cys Leu Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu
 50 55 60
 Gln Ser Arg Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr
 65 70 75 80

Leu Arg Leu Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg
 85 90 95

Gln Gly Leu Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met
 100 105 110

Glu Gly Ala Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg
 115 120 125

Lys Ala Gly Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln
 130 135 140

Glu Glu Val Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala
 145 150 155 160

Met Thr Phe Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala
 165 170 175

Tyr Met Val Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val
 180 185 190

Leu Val His Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu
 195 200 205

Cys Arg Thr Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser
 210 215 220

Lys His Glu Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr
 225 230 235 240

His Thr Thr Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly
 245 250 255

Val Asp Ile Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly
 260 265 270

Tyr Asn Leu Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala
 275 280 285

Asn Leu Leu Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr
 290 295 300

Trp Trp Asn Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn
 305 310 315 320

Arg Ala Val Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu
 325 330 335

Leu Val Ser Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly
 340 345 350

His Ile Lys Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala
 355 360 365

Asp Ala Met Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu
 370 375 380

Leu Val Pro Gly Pro Glu Lys Gln Asn
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<213> Homo sapiens

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Glu Arg Glu Val Ala Glu Ala Ala Thr Gly Glu Asp Ala Ser Ser Pro
5 10 15

cct ccg aaa acc gag gca gcg agc gac ccc cag cat ccc gcg gcc tcc 154
Pro Pro Lys Thr Glu Ala Ala Ser Asp Pro Gln His Pro Ala Ala Ser
20 25 30 35

gaa ggg gcc gcc gcc gcc gcc gcc tgc ccg cca ctg ctg cgc tgc cta 202
Glu Gly Ala Ala Ala Ala Ala Ala Ser Pro Pro Leu Leu Arg Cys Leu
40 45 50

gtg ctc acc ggc ttt gga ggc tac gac aag gtg aag ctg cag agc cgg 250
Val Leu Thr Gly Phe Gly Gly Tyr Asp Lys Val Lys Leu Gln Ser Arg
55 60 65

ccg gca gcg ccc ccg gcc cct ggg ccc ggc cag ctg acg ctg cgt ctg 298
Pro Ala Ala Pro Pro Ala Pro Gly Pro Gly Gln Leu Thr Leu Arg Leu
70 75 80

cgg gcc tgc ggg ctc aac ttc gca gac ctc atg gct agg cag ggg ctg 346
Arg Ala Cys Gly Leu Asn Phe Ala Asp Leu Met Ala Arg Gln Gly Leu
85 90 95

tac gac cgt ctc ccg cct ctg cct gtc act ccg ggc atg gag ggc gcg 394
Tyr Asp Arg Leu Pro Pro Leu Pro Val Thr Pro Gly Met Glu Gly Ala
100 105 110 115

ggt gtt gtg atc gca gtg ggc gag gga gtc agc gac cgc aag gca gga 442
Gly Val Val Ile Ala Val Gly Glu Gly Val Ser Asp Arg Lys Ala Gly
120 125 130

gac cgg gtg atg gtg ttg aac cgg tca ggg atg tgg cag gaa gag gtg 490
Asp Arg Val Met Val Leu Asn Arg Ser Gly Met Trp Gln Glu Glu Val
135 140 145

act gtg ccc tcg gtc cag acc ttc ctg att cct gag gcc atg acc ttt 538
Thr Val Pro Ser Val Gln Thr Phe Leu Ile Pro Glu Ala Met Thr Phe

150	155	160	
gag gaa gct gct gcc ttg ctc gtc aat tac att aca gcc tac atg gtc Glu Glu Ala Ala Ala Leu Leu Val Asn Tyr Ile Thr Ala Tyr Met Val 165 170 175			586
ctc ttt gac ttc ggc aac cta cag cct ggc cac agc gtc ttg gta cac Leu Phe Asp Phe Gly Asn Leu Gln Pro Gly His Ser Val Leu Val His 180 185 190 195			634
atg gct gca ggg ggt gtg ggt atg gct gcc gtg cag ctg tgc cgt aca Met Ala Ala Gly Gly Val Gly Met Ala Ala Val Gln Leu Cys Arg Thr 200 205 210			682
gtg gag aat gtg aca gtg ttc gga acg gcc tcg gcc agc aag cac gag Val Glu Asn Val Thr Val Phe Gly Thr Ala Ser Ala Ser Lys His Glu 215 220 225			730
gca ctg aag gag aat ggg gtc aca cat ccc atc gac tat cac acg act Ala Leu Lys Glu Asn Gly Val Thr His Pro Ile Asp Tyr His Thr Thr 230 235 240			778
gac tac gtg gat gag atc aag aag att tcc cct aaa gga gtg gac att Asp Tyr Val Asp Glu Ile Lys Lys Ile Ser Pro Lys Gly Val Asp Ile 245 250 255			826
gtc atg gac cct ctg ggt ggg tca gat act gcc aag ggc tac aac ctc Val Met Asp Pro Leu Gly Gly Ser Asp Thr Ala Lys Gly Tyr Asn Leu 260 265 270 275			874
ctg aaa ccc atg ggc aaa gtc gtc acc tat gga atg gcc aac ctg ctg Leu Lys Pro Met Gly Lys Val Val Thr Tyr Gly Met Ala Asn Leu Leu 280 285 290			922
acg ggc ccc aaa cgg aac ctg atg gcc ctg gcc cgg aca tgg tgg aat Thr Gly Pro Lys Arg Asn Leu Met Ala Leu Ala Arg Thr Trp Trp Asn 295 300 305			970
cag ttc agc gtg aca gct ctg cag ctg ctg cag gcc aac cgg gct gtg Gln Phe Ser Val Thr Ala Leu Gln Leu Leu Gln Ala Asn Arg Ala Val 310 315 320			1018
tgt ggc ttc cac ctg ggc tac ctg gat ggt gag gtg gag ctg gtc agt Cys Gly Phe His Leu Gly Tyr Leu Asp Gly Glu Val Glu Leu Val Ser 325 330 335			1066
ggt gtg gtg gcc cgc ctc ctg gct ctg tac aac cag ggc cac atc aag Gly Val Val Ala Arg Leu Leu Ala Leu Tyr Asn Gln Gly His Ile Lys 340 345 350 355			1114
ccc cac att gac tca gtc tgg ccc ttc gag aag gtg gct gat gcc atg Pro His Ile Asp Ser Val Trp Pro Phe Glu Lys Val Ala Asp Ala Met 360 365 370			1162
aaa cag atg cag gag aag aag aat gtg ggc aag gtc ctc ctg gtt cca Lys Gln Met Gln Glu Lys Lys Asn Val Gly Lys Val Leu Leu Val Pro 375 380 385			1210

ggg cca gag aag cag aac tagggcaagt ggctgtgaga ccctagagac 1258
 Gly Pro Glu Lys Gln Asn
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cagcgaaggg agaagttggg aagctacgtt ctgttgcca ccagacttgc atttcagcct 1318
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 <212> PRT
 <213> Homo sapiens

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 Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe Asp Lys
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 Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly Leu Ala Phe

35 40 45
Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe Gln Lys His Lys
50 55 60
Met Lys Ala Thr Gly Phe Phe Leu Gly Gly Val Phe Val Val Leu Ile
65 70 75 80
Gly Trp Pro Leu Ile Gly Met Ile Phe Glu Ile Tyr Gly Phe Phe Leu
85 90 95
Leu Phe Arg Gly Phe Phe Pro Val Val Val Gly Phe Ile Arg Arg Val
100 105 110
Pro Val Leu Gly Ser Leu Leu Asn Leu Pro Gly Ile Arg Ser Phe Val
115 120 125
Asp Lys Val Gly Glu Ser Asn Asn Met Val
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<210> 48
<211> 2976
<212> DNA
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<220>
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<222> (110)..(523)

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Met Ile Ser
1

tta acg gac acg cag aaa att gga atg gga tta aca gga ttt gga gtg 166
Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr Gly Phe Gly Val
5 10 15

ttt ttc ctg ttc ttt gga atg att ctc ttt ttt gac aaa gca cta ctg 214
Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe Asp Lys Ala Leu Leu
20 25 30 35

gct att gga aat gtt tta ttt gta gcc ggc ttg gct ttt gta att ggt 262
Ala Ile Gly Asn Val Leu Phe Val Ala Gly Leu Ala Phe Val Ile Gly
40 45 50

tta gaa aga aca ttc aga ttc ttc ttc caa aaa cat aaa atg aaa gct 310
Leu Glu Arg Thr Phe Arg Phe Phe Phe Gln Lys His Lys Met Lys Ala
55 60 65

aca ggt ttt ttt ctg ggt ggt gta ttt gta gtc ctt att ggt tgg cct 358
Thr Gly Phe Phe Leu Gly Gly Val Phe Val Val Leu Ile Gly Trp Pro
70 75 80

ttg ata ggc atg atc ttc gaa att tat gga ttt ttt ctc ttg ttc agg	406
Leu Ile Gly Met Ile Phe Glu Ile Tyr Gly Phe Phe Leu Leu Phe Arg	
85 90 95	
ggc ttc ttt cct gtc gtt gtt ggc ttt att aga aga gtg cca gtc ctt	454
Gly Phe Phe Pro Val Val Val Gly Phe Ile Arg Arg Val Pro Val Leu	
100 105 110 115	
gga tcc ctc cta aat tta cct gga att aga tca ttt gta gat aaa gtt	502
Gly Ser Leu Leu Asn Leu Pro Gly Ile Arg Ser Phe Val Asp Lys Val	
120 125 130	
gga gaa agc aac aat atg gta taacaacaag tgaatttgaa gactcattta	553
Gly Glu Ser Asn Asn Met Val	
135	
aaatattgtg ttattttataa agtcatttga agaattattca gcacaaaatt aaattacatg	613
aaatagcttg taatgttctt tacaggaggt taaaacgtat agcctacaaa gtaccagcag	673
caaattagca aagaagcagt gaaaacaggc ttctactcaa gtgaactaag aagaagtcag	733
caagcaaact gagagaggtg aaatccatgt taatgatgct taagaaactc ttgaaggcta	793
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taaactgact atggtttctt aagaacatga cactaaaaaa aaagtgggtt ttttccaccg	1753
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 aatctgtggt atttattttac aaacatgtct acaaaaaatag attacagctt attttatttt 1993
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 catagcetta agtgtttctg tcattgttca agtgatattt ctgtaacaga aacatatttg 2833
 gaatgttttt cttttccctt tataaattgt aattcctgaa atactgctgc tttaaaaagt 2893
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 caataaaaagg gtacttttct att 2976

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 <212> PRT
 <213> Homo sapiens

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 20 25 30
 Ser Leu Val Glu Leu Leu Ile Arg Pro Val Gln Arg Leu Pro Ser Val
 35 40 45

Ala Leu Leu Leu Asn Asp Leu Lys Lys His Thr Ala Asp Glu Asn Pro
50 55 60

Asp Lys Ser Thr Leu Glu Lys Ala Ile Gly Ser Leu Lys Glu Val Met
65 70 75 80

Thr His Ile Asn Glu Asp Lys Arg Lys Thr Glu Ala Gln Lys Gln Ile
85 90 95

Phe Asp Val Val Tyr Glu Val Asp Gly Cys Pro Ala Asn Leu Leu Ser
100 105 110

Ser His Arg Ser Leu Val Gln Arg Val Glu Thr Ile Ser Leu Gly Glu
115 120 125

His Pro Cys Asp Arg Gly Glu Gln Val Thr Leu Phe Leu Phe Asn Asp
130 135 140

Cys Leu Glu Ile Ala Arg Lys Arg His Lys Val Ile Gly Thr Phe Arg
145 150 155 160

Ser Pro His Gly Gln Thr Arg Pro Pro Ala Ser Leu Lys His Ile His
165 170 175

Leu Met Pro Leu Ser Gln Ile Lys Lys Val Leu Asp Ile Arg Glu Thr
180 185 190

Glu Asp Cys His Asn Ala Phe Ala Leu Leu Val Arg Pro Pro Thr Glu
195 200 205

Gln Ala Asn Val Leu Leu Ser Phe Gln Met Thr Ser Asp Glu Leu Pro
210 215 220

Lys Glu Asn Trp Leu Lys Met Leu Cys Arg His Val Ala Asn Thr Ile
225 230 235 240

Cys Lys Ala Asp Ala Glu Asn Leu Ile Tyr Thr Ala Asp Pro Glu Ser
245 250 255

Phe Glu Val Asn Thr Lys Asp Met Asp Ser Thr Leu Ser Arg Ala Ser
260 265 270

Arg Ala Ile Lys Lys Thr Ser Lys Lys Val Thr Arg Ala Phe Ser Phe
275 280 285

Ser Lys Thr Pro Lys Arg Ala Leu Arg Arg Ala Leu Met Thr Ser His
290 295 300

Gly Ser Val Glu Gly Arg Ser Pro Ser Ser Asn Asp Lys His Val Met
305 310 315 320

Ser Arg Leu Ser Ser Thr Ser Ser Leu Ala Gly Ile Pro Ser Pro Ser
325 330 335

Leu Val Ser Leu Pro Ser Phe Phe Glu Arg Arg Ser His Thr Leu Ser
340 345 350

Arg Ser Thr Thr His Leu Ile
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<213> Homo sapiens

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<222> (327)..(1403)

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atatctttga tgtacacact aagataaagg atgatcttga agaccttata gttaattggg 240
atgagagcaa aagcattgggt gacatttttc tgaaatattc aaaagatttg gtaaaaacct 300
accctccctt tgtaaacttc tttgaa atg agc aag gaa aca att att aaa tgt 353
Met Ser Lys Glu Thr Ile Ile Lys Cys
1 5
gaa aaa cag aaa cca aga ttt cat gct ttt ctc aag ata aac caa gca 401
Glu Lys Gln Lys Pro Arg Phe His Ala Phe Leu Lys Ile Asn Gln Ala
10 15 20 25
aaa cca gaa tgt gga cgg cag agc ctt gtt gaa ctt ctt atc cga cca 449
Lys Pro Glu Cys Gly Arg Gln Ser Leu Val Glu Leu Leu Ile Arg Pro
30 35 40
gta cag agg tta ccc agt gtt gca tta ctt tta aat gat ctt aag aag 497
Val Gln Arg Leu Pro Ser Val Ala Leu Leu Leu Asn Asp Leu Lys Lys
45 50 55
cat aca gct gat gaa aat cca gac aaa agc act tta gaa aaa gct att 545
His Thr Ala Asp Glu Asn Pro Asp Lys Ser Thr Leu Glu Lys Ala Ile
60 65 70
gga tca ctg aag gaa gta atg acg cat att aat gag gat aag aga aaa 593
Gly Ser Leu Lys Glu Val Met Thr His Ile Asn Glu Asp Lys Arg Lys
75 80 85
aca gaa gct caa aag caa att ttt gat gtt gtt tat gaa gta gat gga 641
Thr Glu Ala Gln Lys Gln Ile Phe Asp Val Val Tyr Glu Val Asp Gly
90 95 100 105
tgc cca gct aat ctt tta tct tct cac cga agc tta gta cag cgg gtt 689
Cys Pro Ala Asn Leu Leu Ser Ser His Arg Ser Leu Val Gln Arg Val
110 115 120
gaa aca att tct cta ggt gag cac ccc tgt gac aga gga gaa caa gta 737

Glu Thr Ile Ser Leu Gly Glu His Pro Cys Asp Arg Gly Glu Gln Val	
125 130 135	
act ctc ttc ctc ttc aat gat tgc cta gag ata gca aga aaa cgg cac	785
Thr Leu Phe Leu Phe Asn Asp Cys Leu Glu Ile Ala Arg Lys Arg His	
140 145 150	
aag gtt att ggc act ttt agg agt cct cat ggc caa acc cga ccc cca	833
Lys Val Ile Gly Thr Phe Arg Ser Pro His Gly Gln Thr Arg Pro Pro	
155 160 165	
gct tct ctt aag cat att cac cta atg cct ctt tct cag att aag aag	881
Ala Ser Leu Lys His Ile His Leu Met Pro Leu Ser Gln Ile Lys Lys	
170 175 180 185	
gta ttg gac ata aga gag aca gaa gat tgc cat aat gct ttt gcc ttg	929
Val Leu Asp Ile Arg Glu Thr Glu Asp Cys His Asn Ala Phe Ala Leu	
190 195 200	
ctt gtg agg cca cca aca gag cag gca aat gtg cta ctc agt ttc cag	977
Leu Val Arg Pro Pro Thr Glu Gln Ala Asn Val Leu Leu Ser Phe Gln	
205 210 215	
atg aca tca gat gaa ctt cca aaa gaa aac tgg cta aag atg ctg tgt	1025
Met Thr Ser Asp Glu Leu Pro Lys Glu Asn Trp Leu Lys Met Leu Cys	
220 225 230	
cga cat gta gct aac acc att tgt aaa gca gat gct gag aat ctt att	1073
Arg His Val Ala Asn Thr Ile Cys Lys Ala Asp Ala Glu Asn Leu Ile	
235 240 245	
tat act gct gat cca gaa tcc ttt gaa gta aat aca aaa gat atg gac	1121
Tyr Thr Ala Asp Pro Glu Ser Phe Glu Val Asn Thr Lys Asp Met Asp	
250 255 260 265	
agt aca ttg agt aga gca tca aga gca ata aaa aag act tca aaa aag	1169
Ser Thr Leu Ser Arg Ala Ser Arg Ala Ile Lys Lys Thr Ser Lys Lys	
270 275 280	
gtt aca aga gca ttc tct ttc tcc aaa act cca aaa aga gct ctt cga	1217
Val Thr Arg Ala Phe Ser Phe Ser Lys Thr Pro Lys Arg Ala Leu Arg	
285 290 295	
agg gct ctt atg aca tcc cac ggc tca gtg gag gga aga agt cct tcc	1265
Arg Ala Leu Met Thr Ser His Gly Ser Val Glu Gly Arg Ser Pro Ser	
300 305 310	
agc aat gat aag cat gta atg agt cgt ctt tct agc aca tca tca tta	1313
Ser Asn Asp Lys His Val Met Ser Arg Leu Ser Ser Thr Ser Ser Leu	
315 320 325	
gca ggt atc cct tct ccc tcc ctt gtc agc ctt cct tcc ttc ttt gaa	1361
Ala Gly Ile Pro Ser Pro Ser Leu Val Ser Leu Pro Ser Phe Phe Glu	
330 335 340 345	
agg aga agt cat acg tta agt aga tct aca act cat ttg ata	1403
Arg Arg Ser His Thr Leu Ser Arg Ser Thr Thr His Leu Ile	

350

355

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 Ile Glu Thr Arg Val Ile Leu Val Gln Glu Ala Gly Lys Gln Glu Glu
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 Ser Val Glu Glu Phe Glu Gly Leu Asp Ser Pro Glu Phe Glu Asn Val
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 Phe Val Val Thr Asp Phe Gln Asp Ser Val Phe Asn Asp Leu Tyr Lys
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 Ala Asp Cys Arg Val Ile Gly Pro Pro Val Val Leu Asn Cys Ser Gln
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 Gly Glu Lys Phe Arg Val Ala Val Ser Leu Gly Thr Pro Ile Met Lys
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 225 230 235 240
 Gln Asp Cys Ile Phe Ser Phe Leu Gly Phe Ser Asp Glu Glu Lys Thr
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 Asn Met Glu Glu Met Thr Glu Met Gln Gly Gly Lys Tyr Leu Pro Leu
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 Asp Leu Pro Phe Glu Pro Ser Lys Lys Leu Tyr Val Val Lys Gln Glu
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 Trp Phe Trp Gly Ser Ile Gln Met Asp Ala Arg Ala Gly Glu Thr Met
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 Tyr Leu Tyr Glu Lys Ala Asn Thr Pro Glu Leu Lys Lys Ser Val Ser
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Met Leu Ser Leu Asn Thr Pro Asn Ser Asn Arg Lys Arg Arg Arg Leu
340 345 350

Lys Glu Thr Leu Ala Gln Leu Ser Arg Asp Thr Asp Val Ser Pro Phe
355 360 365

Pro Pro Arg Lys Arg Pro Ser Ala Glu His Ser Leu Ser Ile Gly Ser
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Leu Leu Asp Ile Ser Asn Thr Pro Glu Ser Ser Ile Asn Tyr Gly Asp
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Ser Lys Gln Ser Ala Arg Trp Gln Val Ala Lys Glu Leu Tyr Gln Thr
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Val Pro Leu Glu Glu Glu Gly Gln Arg Gly Gly Pro Ile Leu Ala Pro
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His Thr Lys Ile Lys Asp Asp Leu Glu Asp Leu Ile Val Asn Trp Asp
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Val Lys Thr Tyr Pro Pro Phe Val Asn Phe Phe Glu Met Ser Lys Glu
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Lys Ile Asn Gln Ala Lys Pro Glu Cys Gly Arg Gln Ser Leu Val Glu
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595 600 605

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Ser Thr Thr Gly Arg Thr Ser Leu Ala Asp Ser Ser Ile Phe Asp Ser
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Tyr Val Glu Glu Met Pro Gln Ile Glu Thr Arg Val Ile Leu Val
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Cys Arg Pro Leu Tyr Cys Thr Ser Met Met Asn Leu Val Leu Cys Phe
140 145 150

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Ser Ile Pro Asp Ile Phe Asp Val His Thr Lys Ile Lys Asp Asp Leu	
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Gly Thr Phe Arg Ser Pro His Gly Gln Thr Arg Pro Pro Ala Ser Leu	
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Lys His Val Met Ser Arg Leu Ser Ser Thr Ser Ser Leu Ala Gly Ile	
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His Thr Leu Ser Arg Ser Thr His Leu Ile	
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 Ser Asn Cys Asp Ile Val Lys Ala Thr Gln Tyr Gly Ile Phe Glu Arg

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Gly	Cys	Leu	Leu	Val	Thr	Leu	Phe	Phe	Leu	Thr	Ser	Leu	Phe	Pro	Arg
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Phe	Leu	Val	Gly	Tyr	Lys	Asn	Leu	Val	Tyr	Leu	Pro	Thr	Ala	Phe	Leu
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Phe	Thr	Lys	Ala	Ser	Glu	Glu	Glu	Lys	Lys	Val	Asn	Ile	Ile	Thr	Leu
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Ala	Glu	Thr	Gly	Ser	Leu	Asp	Phe	Arg	Thr	Phe	Cys	Thr	Ser	Cys	Leu
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Ile	Arg	Lys	Pro	Leu	Arg	Ser	Leu	His	Cys	His	Val	Cys	Asn	Cys	Cys
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Val	Ala	Arg	Tyr	Asp	Gln	His	Cys	Leu	Trp	Thr	Gly	Arg	Cys	Ile	Gly
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Val	Cys	Gly	Trp	Ile	Ile	Tyr	Gly	Ser	Phe	Ile	Tyr	Leu	Ser	Ser	His
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Cys	Ala	Thr	Thr	Phe	Lys	Glu	Asp	Gly	Leu	Trp	Thr	Tyr	Leu	Asn	Gln
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Ile	Val	Ala	Cys	Ser	Pro	Trp	Val	Leu	Tyr	Ile	Leu	Met	Leu	Ala	Thr
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Asn Ala Arg Glu Ala Leu Pro Leu Ile Glu Asp Ser Ser Asn Cys Asp
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Ile Val Lys Ala Thr Gln Tyr Gly Ile Phe Glu Arg Cys Lys Glu Leu
55 60 65

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Leu Leu His Trp Ala Ala Ile Asn Asn Arg Leu Asp Leu Val Lys Phe
85 90 95 100

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Tyr Ile Ser Lys Gly Ala Val Val Asp Gln Leu Gly Gly Asp Leu Asn
105 110 115

tca act cct ctt cac tgg gcc atc cga caa gga cat tta cct atg gtc 499
Ser Thr Pro Leu His Trp Ala Ile Arg Gln Gly His Leu Pro Met Val
120 125 130

ata tta tta ctc cag cat ggt gca gac ccc act ctt att gat gga gag 547
Ile Leu Leu Leu Gln His Gly Ala Asp Pro Thr Leu Ile Asp Gly Glu
135 140 145

gga ttc agc agc atc cac ctg gca gta ttg ttt caa cac atg cct att 595
Gly Phe Ser Ser Ile His Leu Ala Val Leu Phe Gln His Met Pro Ile
150 155 160

ata gca tat ctc atc tca aag gga cag agt gtg aat atg aca gat gta 643
Ile Ala Tyr Leu Ile Ser Lys Gly Gln Ser Val Asn Met Thr Asp Val
165 170 175 180

aat ggg cag aca cct ctc atg tta tca gct cac aaa gta att ggg cca 691
Asn Gly Gln Thr Pro Leu Met Leu Ser Ala His Lys Val Ile Gly Pro
185 190 195

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Glu Pro Thr Gly Phe Leu Leu Lys Phe Asn Pro Ser Leu Asn Val Val	
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Asp Lys Ile His Gln Asn Thr Pro Leu His Trp Ala Val Ala Ala Gly	
215 220 225	
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Asn Val Asn Ala Val Asp Lys Leu Leu Glu Ala Gly Ser Ser Leu Asp	
230 235 240	
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Ile Gln Asn Val Lys Gly Glu Thr Pro Leu Asp Met Ala Leu Gln Asn	
245 250 255 260	
aaa aat cag ctc att att cat atg cta aaa aca gaa gcc aaa atg aga	931
Lys Asn Gln Leu Ile Ile His Met Leu Lys Thr Glu Ala Lys Met Arg	
265 270 275	
gcc aac caa aag ttc aga ctt tgg agg tgg ctg cag aaa tgc gag ctc	979
Ala Asn Gln Lys Phe Arg Leu Trp Arg Trp Leu Gln Lys Cys Glu Leu	
280 285 290	
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Phe Leu Leu Leu Met Leu Ser Val Ile Thr Met Trp Ala Ile Gly Tyr	
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Ile Leu Asp Phe Asn Ser Asp Ser Trp Leu Leu Lys Gly Cys Leu Leu	
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gta aca ctg ttt ttt ctg aca tct ttg ttt cca agg ttc ttg gtt ggg	1123
Val Thr Leu Phe Phe Leu Thr Ser Leu Phe Pro Arg Phe Leu Val Gly	
325 330 335 340	
tat aag aac ctt gta tac tta cca aca gcc ttt ctg cta agt tct gtt	1171
Tyr Lys Asn Leu Val Tyr Leu Pro Thr Ala Phe Leu Leu Ser Ser Val	
345 350 355	
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Phe Trp Ile Phe Met Thr Trp Phe Ile Leu Phe Phe Pro Asp Leu Ala	
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Gly Ala Pro Phe Tyr Phe Ser Phe Ile Phe Ser Ile Val Ala Phe Leu	
375 380 385	
tac ttt ttc tat aag act tgg gca act gat cca ggc ttc act aag gct	1315
Tyr Phe Phe Tyr Lys Thr Trp Ala Thr Asp Pro Gly Phe Thr Lys Ala	
390 395 400	
tct gaa gaa gaa aag aaa gtg aat atc atc acc ctt gca gaa act ggc	1363
Ser Glu Glu Glu Lys Lys Val Asn Ile Ile Thr Leu Ala Glu Thr Gly	
405 410 415 420	

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Ser Leu Asp Phe Arg Thr Phe Cys Thr Ser Cys Leu Ile Arg Lys Pro	
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Leu Arg Ser Leu His Cys His Val Cys Asn Cys Cys Val Ala Arg Tyr	
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Asp Gln His Cys Leu Trp Thr Gly Arg Cys Ile Gly Phe Gly Asn His	
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His Tyr Tyr Ile Phe Phe Leu Phe Phe Leu Ser Met Val Cys Gly Trp	
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485 490 495 500	
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Phe Lys Glu Asp Gly Leu Trp Thr Tyr Leu Asn Gln Ile Val Ala Cys	
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Ser Pro Trp Val Leu Tyr Ile Leu Met Leu Ala Thr Phe His Phe Ser	
520 525 530	
tgg tca aca ttt tta tta tta aat caa ctc ttt cag att gcc ttt ctg	1747
Trp Ser Thr Phe Leu Leu Leu Asn Gln Leu Phe Gln Ile Ala Phe Leu	
535 540 545	
ggc ctg acc tcc cat gag aga atc agc ctg cag aag cag agc aag cat	1795
Gly Leu Thr Ser His Glu Arg Ile Ser Leu Gln Lys Gln Ser Lys His	
550 555 560	
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Met Lys Gln Thr Leu Ser Leu Arg Lys Thr Pro Tyr Asn Leu Gly Phe	
565 570 575 580	
atg cag aac ctg gca gat ttc ttt cag tgt ggc tgc ttt ggc ttg gtg	1891
Met Gln Asn Leu Ala Asp Phe Phe Gln Cys Gly Cys Phe Gly Leu Val	
585 590 595	
aag ccc tgt gtg gta gat tgg aca tca cag tac acc atg gtc ttt cac	1939
Lys Pro Cys Val Val Asp Trp Thr Ser Gln Tyr Thr Met Val Phe His	
600 605 610	
cca gcc agg gag aag gtt ctt cgc tca gta tgaagaaaag caaccctaaa	1989
Pro Ala Arg Glu Lys Val Leu Arg Ser Val	
615 620	
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aagttctcaa taaaggcatt acaatttttt aggttttagaa agatggactt ttctgataaa	2169

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 gtttcaaaat agtactattc tttaaacttg taatttttgc taagttattt gtctttgttg 2349
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 Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg Lys Pro
 35 40 45
 Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala Val Leu
 50 55 60
 Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe Ala Leu
 65 70 75 80
 Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr Ile Gly
 85 90 95
 Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr Ser Arg
 100 105 110
 Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly Ala Gly
 115 120 125
 Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser Thr Gly
 130 135 140
 Gln Val Phe Leu Gly Ile Tyr Leu Ile Cys Val Ala Tyr Ser Leu Gln
 145 150 155 160
 His Ser Lys Glu Asp Arg Leu Ala Tyr Leu Asn His Leu Pro Gly Gly
 165 170 175
 Glu Leu Met Ile Gln Leu Phe Phe Val Leu Tyr Gly Ile Leu Ala Leu
 180 185 190
 Ala Phe Leu Ser Gly Tyr Tyr Val Thr Leu Ala Ala Gln Ile Leu Ala
 195 200 205

Val Leu Leu Pro Pro Val Met Leu Leu Ile Asp Gly Asn Val Ala Tyr
210 215 220
Trp His Asn Thr Arg Arg Val Glu Phe Trp Asn Gln Met Lys Leu Leu
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Gly Glu Ser Val Gly Ile Phe Gly Thr Ala Val Ile Leu Ala Thr Asp
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Gly

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Ile Met Gln Leu Gly Ser Val Leu Leu Thr Arg Cys Pro Phe Trp Gly
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tgc ttc agc cag ctc atg ctg tac gct gag agg gct gag gca cgc cgg 147
Cys Phe Ser Gln Leu Met Leu Tyr Ala Glu Arg Ala Glu Ala Arg Arg
35 40 45
aag ccc gac atc cca gtg cct tac ctg tat ttc gac atg ggg gca gcc 195
Lys Pro Asp Ile Pro Val Pro Tyr Leu Tyr Phe Asp Met Gly Ala Ala
50 55 60
gtg ctg tgc gct agt ttc atg tcc ttt ggc gtg aag cgg cgc tgg ttc 243
Val Leu Cys Ala Ser Phe Met Ser Phe Gly Val Lys Arg Arg Trp Phe
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Ala Leu Gly Ala Ala Leu Gln Leu Ala Ile Ser Thr Tyr Ala Ala Tyr
80 85 90
atc ggg ggc tac gtc cac tac ggg gac tgg ctg aag gtc cgt atg tac 339
Ile Gly Gly Tyr Val His Tyr Gly Asp Trp Leu Lys Val Arg Met Tyr
95 100 105 110
tcg cgc aca gtt gcc atc atc ggc ggc ttt ctt gtg ttg gcc agc ggt 387
Ser Arg Thr Val Ala Ile Ile Gly Gly Phe Leu Val Leu Ala Ser Gly
115 120 125
gct ggg gag ctg tac cgc cgg aaa cct cgc agc cgc tcc ctg cag tcc 435
Ala Gly Glu Leu Tyr Arg Arg Lys Pro Arg Ser Arg Ser Leu Gln Ser

130										135										140										
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Thr	Gly	Gln	Val	Phe	Leu	Gly	Ile	Tyr	Leu	Ile	Cys	Val	Ala	Tyr	Ser															
145							150							155																
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gga	ggg	gag	ctg	atg	atc	cag	ctg	ttc	ttc	gtg	ctg	tat	ggc	atc	ctg	579														
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gcc	ctg	gcc	ttt	ctg	tca	ggc	tac	tac	gtg	acc	ctc	gct	gcc	cag	atc	627														
Ala	Leu	Ala	Phe	Leu	Ser	Gly	Tyr	Tyr	Val	Thr	Leu	Ala	Ala	Gln	Ile															
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225							230							235																
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Leu	Leu	Gly	Glu	Ser	Val	Gly	Ile	Phe	Gly	Thr	Ala	Val	Ile	Leu	Ala															
240							245							250																
act	gat	ggc	tgagttttat	ggcaagaggc			tgagatgggc			acagggagcc						820														
Thr	Asp	Gly																												
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<400> 57

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Leu Thr Glu Leu Gln Leu Arg Ala Arg Gln Leu Leu Asp Gln Val Glu
      35             40             45

Gln Ile Gln Lys Glu Gln Asp Tyr Gln Arg Tyr Arg Glu Glu Arg Phe
      50             55             60

Arg Leu Thr Ser Glu Ser Thr Asn Gln Arg Val Leu Trp Trp Ser Ile
      65             70             75             80

Ala Gln Thr Val Ile Leu Ile Leu Thr Gly Ile Trp Gln Met Arg His
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Leu Lys Ser Phe Phe Glu Ala Lys Lys Leu Val
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<400> 58

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Ile Gln Val Gly Glu His Ala Asn Asn Tyr Pro Glu Ile Ala Ala Lys
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gat aag ctg acg gag cta cag ctc cgc gcc cgc cag ttg ctt gat cag   146
Asp Lys Leu Thr Glu Leu Gln Leu Arg Ala Arg Gln Leu Leu Asp Gln
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gtg gaa cag att cag aag gag cag gat tac caa agg tat cgt gaa gag   194
Val Glu Gln Ile Gln Lys Glu Gln Asp Tyr Gln Arg Tyr Arg Glu Glu
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cgc ttc cga ctg acg agc gag agc acc aac cag agg gtc cta tgg tgg   242

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Arg	Phe	Arg	Leu	Thr	Ser	Glu	Ser	Thr	Asn	Gln	Arg	Val	Leu	Trp	Trp			
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Ser Ile Ala Gln Thr Val Ile Leu Ile Leu Thr Gly Ile Trp Gln Met																		
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Arg His Leu Lys Ser Phe Phe Glu Ala Lys Lys Leu Val																		
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caaaccattc agatcacgcc cttgctgacc ctggtttcta aggacacatg acattagtcc																519		
aatctttcaa aatcttgtct tagggcttgt gaggaatcag aactaaccca ggactcagtc																579		
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 20 25 30
 Val Glu Lys Leu Ala Asp Glu Leu His Met Pro Ser Leu Pro Glu Met
 35 40 45
 Met Phe Gly Asp Asn Val Leu Arg Ile Gln His Gly Ser Gly Phe Gly
 50 55 60
 Ile Glu Phe Asn Ala Thr Asp Ala Leu Arg Cys Val Asn Asn Tyr Gln
 65 70 75 80
 Gly Met Leu Lys Val Ala Cys Ala Glu Glu Trp Gln Glu Ser Arg Thr
 85 90 95
 Glu Gly Glu His Ser Lys Glu Val Ile Lys Pro Tyr Asp Trp Thr Tyr
 100 105 110
 Thr Thr Asp Tyr Lys Gly Thr Leu Leu Gly Glu Ser Leu Lys Leu Lys
 115 120 125
 Val Val Pro Thr Thr Asp His Ile Asp Thr Glu Lys Leu Lys Ala Arg
 130 135 140
 Glu Gln Ile Lys Phe Phe Glu Glu Val Leu Leu Phe Glu Asp Glu Leu
 145 150 155 160
 His Asp His Gly Val Ser Ser Leu Ser Val Lys Ile Arg Val Met Pro
 165 170 175
 Ser Ser Phe Phe Leu Leu Leu Arg Phe Phe Leu Arg Ile Asp Gly Val
 180 185 190
 Leu Ile Arg Met Asn Asp Thr Arg Leu Tyr His Glu Ala Asp Lys Thr
 195 200 205
 Tyr Met Leu Arg Glu Tyr Thr Ser Arg Glu Ser Lys Ile Ser Ser Leu
 210 215 220
 Met His Val Pro Pro Ser Leu Phe Thr Glu Pro Asn Glu Ile Ser Gln
 225 230 235 240
 Tyr Leu Pro Ile Lys Glu Ala Val Cys Glu Lys Leu Ile Phe Pro Glu
 245 250 255
 Arg Ile Asp Pro Asn Pro Ala Asp Ser Gln Lys Ser Thr Gln Val Glu
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<211> 1916

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<213> Homo sapiens

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Met
1

atg atc cac ggc ttc cag agc agc cac cgg gat ttc tgc ttc ggg ccc 167
Met Ile His Gly Phe Gln Ser Ser His Arg Asp Phe Cys Phe Gly Pro
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tgg aag ctg acg gcg tcc aag acc cac atc atg aag tgc gcg gat gtg 215
Trp Lys Leu Thr Ala Ser Lys Thr His Ile Met Lys Ser Ala Asp Val
20 25 30

gag aaa tta gcc gat gaa tta cat atg cca tct ctc cct gaa atg atg 263
Glu Lys Leu Ala Asp Glu Leu His Met Pro Ser Leu Pro Glu Met Met
35 40 45

ttt gga gac aac gtt tta aga atc cag cat ggg tct ggc ttt gga att 311
Phe Gly Asp Asn Val Leu Arg Ile Gln His Gly Ser Gly Phe Gly Ile
50 55 60 65

gag ttc aat gct aca gat gcg tta aga tgt gta aac aac tac caa gga 359
Glu Phe Asn Ala Thr Asp Ala Leu Arg Cys Val Asn Asn Tyr Gln Gly
70 75 80

atg ctt aaa gtg gcc tgt gct gaa gag tgg caa gaa agc agg acg gag 407
Met Leu Lys Val Ala Cys Ala Glu Glu Trp Gln Glu Ser Arg Thr Glu
85 90 95

ggt gaa cac tcc aaa gag gtt att aaa cca tat gat tgg acc tat aca 455
Gly Glu His Ser Lys Glu Val Ile Lys Pro Tyr Asp Trp Thr Tyr Thr
100 105 110

aca gat tat aag gga acc tta ctt gga gaa tct ctt aag tta aag gtt 503
Thr Asp Tyr Lys Gly Thr Leu Leu Gly Glu Ser Leu Lys Leu Lys Val
115 120 125

gta cct aca aca gat cat ata gat aca gaa aaa ttg aaa gcc aga gaa 551
Val Pro Thr Thr Asp His Ile Asp Thr Glu Lys Leu Lys Ala Arg Glu
130 135 140 145

cag att aag ttt ttt gaa gaa gtt ctc ctt ttt gag gat gaa ctt cat 599
Gln Ile Lys Phe Phe Glu Glu Val Leu Leu Phe Glu Asp Glu Leu His
150 155 160

gat cat gga gtt tca agc ctg agt gtg aag att aga gta atg cct tct 647
Asp His Gly Val Ser Ser Leu Ser Val Lys Ile Arg Val Met Pro Ser
165 170 175

agc ttt ttc ctg ctg ttg cgg ttt ttc ttg aga att gat ggg gtg ctt 695

Ser	Phe	Phe	Leu	Leu	Leu	Arg	Phe	Phe	Leu	Arg	Ile	Asp	Gly	Val	Leu	
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Ile	Arg	Met	Asn	Asp	Thr	Arg	Leu	Tyr	His	Glu	Ala	Asp	Lys	Thr	Tyr	
	195					200				205						
atg	tta	cga	gaa	tat	acg	tca	cga	gaa	agc	aaa	att	tct	agt	ttg	atg	791
Met	Leu	Arg	Glu	Tyr	Thr	Ser	Arg	Glu	Ser	Lys	Ile	Ser	Ser	Leu	Met	
	210				215					220				225		
cat	gtt	cca	cct	tcc	ctc	ttc	acg	gaa	cct	aat	gaa	ata	tcc	cag	tat	839
His	Val	Pro	Pro	Ser	Leu	Phe	Thr	Glu	Pro	Asn	Glu	Ile	Ser	Gln	Tyr	
				230					235					240		
tta	cca	ata	aag	gaa	gca	gtt	tgt	gag	aag	cta	ata	ttt	cca	gaa	aga	887
Leu	Pro	Ile	Lys	Glu	Ala	Val	Cys	Glu	Lys	Leu	Ile	Phe	Pro	Glu	Arg	
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Trp	Asn	Asp	Leu	Asn	Phe	Leu	Phe	Ile	His	Leu	Pro	Phe	Leu	Ala	Asn
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Cys	Ile	Ala	Lys	Phe	Asp	His	His	Cys	Pro	Trp	Val	Gly	Asn	Cys	Val
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Phe	Met	Ile	Cys	Trp	Met	Ile	Tyr	Gly	Cys	Ile	Ser	Tyr	Trp	Gly	Leu
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His	Cys	Glu	Thr	Thr	Tyr	Thr	Lys	Asp	Gly	Phe	Trp	Thr	Tyr	Ile	Thr
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Val	Phe	His	Phe	Met	Trp	Val	Ala	Val	Leu	Leu	Met	Cys	Gln	Met	Tyr
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Arg	Tyr	Lys	His	Phe	Lys	Val	Thr	Thr	Thr	Ser	Ile	Glu	Ser	Pro	Phe
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Gly Cys Val Pro Leu Leu His Pro Glu Glu Ile Lys Pro Gln Ser His
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Ser	Trp	Leu	Ile	Lys	Gly	Leu	Met	Tyr	Gly	Gly	Gly	Val	Trp	Ala	Thr	Val	
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Gln	Phe	Leu	Ser	Lys	Ser	Phe	Phe	Asp	His	Ser	Met	His	Ser	Ala	Leu		
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Pro	Leu	Gly	Ile	Tyr	Leu	Ala	Thr	Lys	Phe	Trp	Met	Tyr	Val	Thr	Trp		
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Thr	Ile	Val	Glu	Leu	Ala	Glu	Thr	Gly	Ser	Leu	Asp	Leu	Ser	Ile	Phe		
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Cys	Ser	Thr	Cys	Leu	Ile	Arg	Lys	Pro	Val	Arg	Ser	Lys	His	Cys	Gly		
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aca tac att act cag att gcc acg tgt tca cct tgg atg ttt tgg atg		1585
Thr Tyr Ile Thr Gln Ile Ala Thr Cys Ser Pro Trp Met Phe Trp Met 510 515 520		
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Phe Leu Asn Ser Val Phe His Phe Met Trp Val Ala Val Leu Leu Met 525 530 535 540		
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Cys Gln Met Tyr Gln Ile Ser Cys Leu Gly Ile Thr Thr Asn Glu Arg 545 550 555		
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Met Asn Ala Arg Arg Tyr Lys His Phe Lys Val Thr Thr Ser Ile 560 565 570		
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Glu Ser Pro Phe Asn His Gly Cys Val Arg Asn Ile Ile Asp Phe Phe 575 580 585		
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Glu Phe Arg Cys Cys Gly Leu Phe Arg Pro Val Ile Val Asp Trp Thr 590 595 600		
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Arg Gln Tyr Thr Ile Glu Tyr Asp Gln Ile Ser Gly Ser Gly Tyr Gln 605 610 615 620		
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Tyr	Asp	Val	Arg	Gln	Pro	Asp	Lys	Glu	Asn	Val	Thr	Leu	Leu	His	Trp		
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Lys Asn Thr Ala Leu His Trp Ala Val Leu Ala Gly Asn Thr Thr Val
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Ile Ser Leu Leu Leu Glu Ala Gly Ala Asn Val Asp Ala Gln Asn Ile
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Lys Gly Glu Ser Ala Leu Asp Leu Ala Lys Gln Arg Lys Asn Val Trp
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Met Ile Asn His Leu Gln Glu Ala Arg Gln Ala Lys Gly Tyr Asp Asn
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Pro Ser Phe Leu Arg Lys Leu Lys Ala Asp Lys Glu Phe Arg Gln Lys
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Val Met Leu Gly Thr Pro Phe Leu Val Ile Trp Leu Val Gly Phe Ile
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Ala Asp Leu Asn Ile Asp Ser Trp Leu Ile Lys Gly Leu Met Tyr Gly
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Gly Val Trp Ala Thr Val Gln Phe Leu Ser Lys Ser Phe Phe Asp His
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Ser Met His Ser Ala Leu Pro Leu Gly Ile Tyr Leu Ala Thr Lys Phe
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Trp Met Tyr Val Thr Trp Phe Phe Trp Phe Trp Asn Asp Leu Asn Phe
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Asn Phe Gly Lys Ser Trp Lys Ser Asp Pro Gly Ile Ile Lys Ala Thr
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Glu Glu Gln Lys Lys Lys Thr Ile Val Glu Leu Ala Glu Thr Gly Ser
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Asn Ile Ile Asp Phe Phe Glu Phe Arg Cys Cys Gly Leu Phe Arg Pro
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Ser	Ala	Leu	Pro	Leu	Gly	Ile	Tyr	Leu	Ala	Thr	Lys	Phe	Trp	Met	Tyr		
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 ggagccagct atgcagcagt ataccatctg tttaattatt ttgtaggtcc tgtgtgtgga 4323
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 tttatttata actgtgccaa gtattatttt gctacttacc gtgttattct gtggaaagaa 4623
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 taaaatatta atcagaataa atactgactc tt 4715

<210> 67
 <211> 498
 <212> PRT
 <213> Homo sapiens

<400> 67

Met	Ala	Arg	Leu	Glu	Val	Ile	Glu	Leu	Pro	His	Ser	Pro	Gln	Asn	Leu	1	5	10	15
Leu	Val	Ser	Pro	Asn	Ser	Ser	His	Ser	His	Ala	Val	Val	Leu	Ser	Trp	20	25	30	
Val	Arg	Pro	Phe	Asp	Gly	Asn	Ser	Pro	Ile	Leu	Tyr	Tyr	Ile	Val	Glu	35	40	45	
Leu	Ser	Glu	Asn	Asn	Ser	Pro	Trp	Lys	Val	His	Leu	Ser	Asn	Val	Gly	50	55	60	
Pro	Glu	Met	Thr	Gly	Val	Thr	Val	Ser	Gly	Leu	Thr	Pro	Ala	Arg	Thr	65	70	75	80
Tyr	Gln	Phe	Arg	Val	Cys	Ala	Val	Asn	Glu	Val	Gly	Arg	Gly	Gln	Tyr	85	90	95	
Ser	Ala	Glu	Thr	Ser	Arg	Leu	Met	Leu	Pro	Glu	Glu	Pro	Pro	Ser	Ala	100	105	110	
Pro	Pro	Lys	Asn	Ile	Val	Ala	Ser	Gly	Arg	Thr	Asn	Gln	Ser	Ile	Met	115	120	125	
Val	Gln	Trp	Gln	Pro	Pro	Pro	Glu	Thr	Glu	His	Asn	Gly	Val	Leu	Arg	130	135	140	
Gly	Tyr	Ile	Leu	Arg	Tyr	Arg	Leu	Ala	Gly	Leu	Pro	Gly	Glu	Tyr	Gln	145	150	155	160
Gln	Arg	Asn	Ile	Thr	Ser	Pro	Glu	Val	Asn	Tyr	Cys	Leu	Val	Thr	Asp	165	170	175	
Leu	Ile	Ile	Trp	Thr	Gln	Tyr	Glu	Ile	Gln	Val	Ala	Ala	Tyr	Asn	Gly	180	185	190	
Ala	Gly	Leu	Gly	Val	Phe	Ser	Arg	Ala	Val	Thr	Glu	Tyr	Thr	Leu	Gln	195	200	205	
Gly	Val	Pro	Thr	Ala	Pro	Pro	Gln	Asn	Val	Gln	Thr	Glu	Ala	Val	Asn	210	215	220	

(The following information was obtained from the above mentioned source.)

[illegible]

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<222> (22) .. (1515)
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<400> 68

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cag acg gaa gcc gtg aac tcc acc acc att cag ttc ctg tgg aac cct Gln Thr Glu Ala Val Asn Ser Thr Thr Ile Gln Phe Leu Trp Asn Pro 220 225 230	723
ccg cct cag cag ttt atc aat ggc atc aac cag gga tac aag ctt ctg Pro Pro Gln Gln Phe Ile Asn Gly Ile Asn Gln Gly Tyr Lys Leu Leu 235 240 245 250	771
gca tgg ccg gca gat gcc ccc gag gct gtc act gtg gtc act att gcc Ala Trp Pro Ala Asp Ala Pro Glu Ala Val Thr Val Val Thr Ile Ala 255 260 265	819
cca gat ttc cac gga gtc cac cat gga cac ata acg aac ctg aag aag Pro Asp Phe His Gly Val His His Gly His Ile Thr Asn Leu Lys Lys 270 275 280	867
ttt acc gcc tac ttc act tcc gtt ctg tgc ttc acc acc cct ggg gac Phe Thr Ala Tyr Phe Thr Ser Val Leu Cys Phe Thr Thr Pro Gly Asp 285 290 295	915
ggg cct ccc agc aca cct cag ctg gtc tgg act cag gaa gac aaa cca Gly Pro Pro Ser Thr Pro Gln Leu Val Trp Thr Gln Glu Asp Lys Pro 300 305 310	963
gga gct gtg gga cat ctg agt ttc aca gag atc ttg gac aca tct ctc Gly Ala Val Gly His Leu Ser Phe Thr Glu Ile Leu Asp Thr Ser Leu 315 320 325 330	1011
aag gtc agc tgg cag gag ccc ctg gag aaa aat ggc atc att act ggc Lys Val Ser Trp Gln Glu Pro Leu Glu Lys Asn Gly Ile Ile Thr Gly 335 340 345	1059
tat cag atc tct tgg gaa gtg tac ggc agg aac gac tct cgt ctc acg Tyr Gln Ile Ser Trp Glu Val Tyr Gly Arg Asn Asp Ser Arg Leu Thr 350 355 360	1107
cac acc ctg aac agc acg atg cac gag tac aag atc caa ggc ctc tca His Thr Leu Asn Ser Thr Met His Glu Tyr Lys Ile Gln Gly Leu Ser 365 370 375	1155
tct ctc acc acc tac acc atc gac gtg gcc gct gtg act gcc gtg ggc Ser Leu Thr Thr Tyr Thr Ile Asp Val Ala Ala Val Thr Ala Val Gly 380 385 390	1203
act ggc ctg gtg act tca tcc acc att tct tct gga gtg ccc cca gac Thr Gly Leu Val Thr Ser Ser Thr Ile Ser Ser Gly Val Pro Pro Asp 395 400 405 410	1251
ctt cct ggt gcc cca tcc aac ctg gtc att tcc aac atc agc cct cgc	1299

SECRET

Tyr	Gln	Phe	Arg	Val	Cys	Ala	Val	Asn	Glu	Val	Gly	Arg	Gly	Tyr	85	90	95		
Ser	Ala	Glu	Thr	Ser	Arg	Leu	Met	Leu	Pro	Glu	Glu	Pro	Pro	Ser	Ala	100	105	110	
Pro	Pro	Lys	Asn	Ile	Val	Ala	Ser	Gly	Arg	Thr	Asn	Gln	Ser	Ile	Met	115	120	125	
Val	Gln	Trp	Gln	Pro	Pro	Pro	Glu	Thr	Glu	His	Asn	Gly	Val	Leu	Arg	130	135	140	
Gly	Tyr	Ile	Leu	Arg	Tyr	Arg	Leu	Ala	Gly	Leu	Pro	Gly	Glu	Tyr	Gln	145	150	155	160
Gln	Arg	Asn	Ile	Thr	Ser	Pro	Glu	Val	Asn	Tyr	Cys	Leu	Val	Thr	Asp	165	170	175	
Leu	Ile	Ile	Trp	Thr	Gln	Tyr	Glu	Ile	Gln	Val	Ala	Ala	Tyr	Asn	Gly	180	185	190	
Ala	Gly	Leu	Gly	Val	Phe	Ser	Arg	Ala	Val	Thr	Glu	Tyr	Thr	Leu	Gln	195	200	205	
Gly	Val	Pro	Thr	Ala	Pro	Pro	Gln	Asn	Val	Gln	Thr	Glu	Ala	Val	Asn	210	215	220	
Ser	Thr	Thr	Ile	Gln	Phe	Leu	Trp	Asn	Pro	Pro	Pro	Gln	Gln	Phe	Ile	225	230	235	240
Asn	Gly	Ile	Asn	Gln	Gly	Tyr	Lys	Leu	Leu	Ala	Trp	Pro	Ala	Asp	Ala	245	250	255	
Pro	Glu	Ala	Val	Thr	Val	Val	Thr	Ile	Ala	Pro	Asp	Phe	His	Gly	Val	260	265	270	
His	His	Gly	His	Ile	Thr	Asn	Leu	Lys	Lys	Phe	Thr	Ala	Tyr	Phe	Thr	275	280	285	
Ser	Val	Leu	Cys	Phe	Thr	Thr	Pro	Gly	Asp	Gly	Pro	Pro	Ser	Thr	Pro	290	295	300	
Gln	Leu	Val	Trp	Thr	Gln	Glu	Asp	Lys	Pro	Gly	Ala	Val	Gly	His	Leu	305	310	315	320
Ser	Phe	Thr	Glu	Ile	Leu	Asp	Thr	Ser	Leu	Lys	Val	Ser	Trp	Gln	Glu	325	330	335	
Pro	Leu	Glu	Lys	Asn	Gly	Ile	Ile	Thr	Gly	Tyr	Gln	Ile	Ser	Trp	Glu	340	345	350	
Val	Tyr	Gly	Arg	Asn	Asp	Ser	Arg	Leu	Thr	His	Thr	Leu	Asn	Ser	Thr	355	360	365	
Thr	His	Glu	Tyr	Lys	Ile	Gln	Gly	Leu	Ser	Ser	Leu	Thr	Thr	Tyr	Thr	370	375	380	

$$A = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \quad B = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \quad C = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \quad D = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

75	80	85	90	
gtg ggc agg ggc cag tac agt gcc gag aca agc agg ttg atg cta cct				339
Val Gly Arg Gly Gln Tyr Ser Ala Glu Thr Ser Arg Leu Met Leu Pro	95	100	105	
gaa gaa cca ccc agt gct ccc ccg aaa aat ata gtg gcc agt ggg cgg				387
Glu Glu Pro Pro Ser Ala Pro Pro Lys Asn Ile Val Ala Ser Gly Arg	110	115	120	
act aat cag tcc att atg gtc cag tgg cag cca ccc cca gaa aca gag				435
Thr Asn Gln Ser Ile Met Val Gln Trp Gln Pro Pro Pro Glu Thr Glu	125	130	135	
cac aac ggg gtg ttg cgt gga tac atc ctc agg tac cgc ctg gct ggc				483
His Asn Gly Val Leu Arg Gly Tyr Ile Leu Arg Tyr Arg Leu Ala Gly	140	145	150	
ctt ccc gga gag tac cag cag cgg aac atc acc agc ccg gag gtg aac				531
Leu Pro Gly Glu Tyr Gln Gln Arg Asn Ile Thr Ser Pro Glu Val Asn	155	160	165	170
tac tgc ctg gtg aca gac ctg atc atc tgg aca cag tat gag ata cag				579
Tyr Cys Leu Val Thr Asp Leu Ile Ile Trp Thr Gln Tyr Glu Ile Gln	175	180	185	
gtg gcg gcg tac aac ggg gcc ggt ctg ggc gtc ttc agc agg gca gtg				627
Val Ala Ala Tyr Asn Gly Ala Gly Leu Gly Val Phe Ser Arg Ala Val	190	195	200	
acc gag tac acc ttg cag gga gtg ccc acc gcg ccc ccg cag aac gtg				675
Thr Glu Tyr Thr Leu Gln Gly Val Pro Thr Ala Pro Pro Gln Asn Val	205	210	215	
cag acg gaa gcc gtg aac tcc acc acc att cag ttc ctg tgg aac cct				723
Gln Thr Glu Ala Val Asn Ser Thr Thr Ile Gln Phe Leu Trp Asn Pro	220	225	230	
ccg cct cag cag ttt atc aat ggc atc aac cag gga tac aag ctt ctg				771
Pro Pro Gln Gln Phe Ile Asn Gly Ile Asn Gln Gly Tyr Lys Leu Leu	235	240	245	250
gca tgg ccg gca gat gcc ccc gag gct gtc act gtg gtc act att gcc				819
Ala Trp Pro Ala Asp Ala Pro Glu Ala Val Thr Val Val Thr Ile Ala	255	260	265	
cca gat ttc cac gga gtc cac cat gga cac ata acg aac ctg aag aag				867
Pro Asp Phe His Gly Val His His Gly His Ile Thr Asn Leu Lys Lys	270	275	280	
ttt acc gcc tac ttc act tcc gtt ctg tgc ttc acc acc cct ggg gac				915
Phe Thr Ala Tyr Phe Thr Ser Val Leu Cys Phe Thr Thr Pro Gly Asp	285	290	295	
ggg cct ccc agc aca cct cag ctg gtc tgg act cag gaa gac aaa cca				963
Gly Pro Pro Ser Thr Pro Gln Leu Val Trp Thr Gln Glu Asp Lys Pro	300	305	310	

gga gct gtg gga cat ctg agt ttc aca gag atc ttg gac aca tct ctc 1011
 Gly Ala Val Gly His Leu Ser Phe Thr Glu Ile Leu Asp Thr Ser Leu
 315 320 325 330

aag gtc agc tgg cag gag ccc ctg gag aaa aat ggc atc att act ggc 1059
 Lys Val Ser Trp Gln Glu Pro Leu Glu Lys Asn Gly Ile Ile Thr Gly
 335 340 345

tat cag atc tct tgg gaa gtg tac ggc agg aac gac tct cgt ctc acg 1107
 Tyr Gln Ile Ser Trp Glu Val Tyr Gly Arg Asn Asp Ser Arg Leu Thr
 350 355 360

cac acc ctg aac agc acg acg cac gag tac aag atc caa ggc ctc tca 1155
 His Thr Leu Asn Ser Thr Thr His Glu Tyr Lys Ile Gln Gly Leu Ser
 365 370 375

tct ctc acc acc tac acc atc gac gtg gcc gct gtg act gcc gtg ggc 1203
 Ser Leu Thr Thr Tyr Thr Ile Asp Val Ala Ala Val Thr Ala Val Gly
 380 385 390

act ggc ctg gtg act tca tcc acc att tct tct gga gtg ccc cca gac 1251
 Thr Gly Leu Val Thr Ser Ser Thr Ile Ser Ser Gly Val Pro Pro Asp
 395 400 405 410

ctt cct ggt gcc cca tcc aac ctg gtc att tcc aac atc agc cct cgc 1299
 Leu Pro Gly Ala Pro Ser Asn Leu Val Ile Ser Asn Ile Ser Pro Arg
 415 420 425

tcc gcc acc ctt cag ttc cgg cca ggc tat gac ggg aaa acg tcc atc 1347
 Ser Ala Thr Leu Gln Phe Arg Pro Gly Tyr Asp Gly Lys Thr Ser Ile
 430 435 440

tcc agg tgg att gtt gag ggg cag atg aga cat caa ggt gtt gga tta 1395
 Ser Arg Trp Ile Val Glu Gly Gln Met Arg His Gln Gly Val Gly Leu
 445 450 455

cct gcc gag gtc aca cag cca agc cat gaa gcc gga ttg gag cct gca 1443
 Pro Ala Glu Val Thr Gln Pro Ser His Glu Ala Gly Leu Glu Pro Ala
 460 465 470

aac ctc gga agt ctg tgg ctg ctc agc ctg gtg tat tgg tgt tac agc 1491
 Asn Leu Gly Ser Leu Trp Leu Leu Ser Leu Val Tyr Trp Cys Tyr Ser
 475 480 485 490

cag aaa ctt tgg gaa ttc tct tgt tagttgggta gttttactgt aattttctat 1545
 Gln Lys Leu Trp Glu Phe Ser Cys
 495

aaagaattca tatcatctgt taatggcgac agtttttggtt tcttcctttg aattttttat 1605

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cactctaaag aaattattgt aagattttat catcagggtat gacatttaca ccattgatgt 1785

gcg gag aag ggg aga ggc atg gag cta tcc gac ctg att gtt ttc aat 648
 Ala Glu Lys Gly Arg Gly Met Glu Leu Ser Asp Leu Ile Val Phe Asn
 160 165 170

ggg aaa ctc tac tcc gtg gat gac cgg acg ggg gtc gtc tac cag atc 696
 Gly Lys Leu Tyr Ser Val Asp Asp Arg Thr Gly Val Val Tyr Gln Ile
 175 180 185 190

gaa ggc agc aaa gcc gtg ccc tgg gtg att ctg tcc gac ggc gac ggc 744
 Glu Gly Ser Lys Ala Val Pro Trp Val Ile Leu Ser Asp Gly Asp Gly
 195 200 205

acc gtg gag aaa ggc ttc aag gcc gaa tgg ctg gca gtg cgg gag att 792
 Thr Val Glu Lys Gly Phe Lys Ala Glu Trp Leu Ala Val Arg Glu Ile
 210 215 220

gta agg aag cgg tgg cgg ctg gtg aag caa gtc tca cat gtc ggc gtt 840
 Val Arg Lys Arg Trp Arg Leu Val Lys Gln Val Ser His Val Gly Val
 225 230 235

ctt ggc caa tgg ata caa aga taaagaaaat gttgcctttt tctaggaact 891
 Leu Gly Gln Trp Ile Gln Arg
 240 245

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 <212> PRT
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Ala	Arg	Val	Ser	Gln	Glu	Leu	Lys	Gly	Ala	Lys	Lys	Val	His	Leu	Gly
		35					40					45			
Glu	Asp	Leu	Lys	Ser	Ile	Leu	Ser	Glu	Ala	Pro	Gly	Lys	Cys	Val	Pro
	50					55					60				
Tyr	Ala	Val	Ile	Glu	Gly	Ala	Val	Arg	Ser	Val	Lys	Glu	Thr	Leu	Asn
	65					70				75					80
Ser	Gln	Phe	Val	Glu	Asn	Cys	Lys	Gly	Val	Ile	Gln	Arg	Leu	Thr	Leu
				85						90					95
Gln	Glu	His	Lys	Met	Val	Trp	Asn	Arg	Thr	Thr	His	Leu	Trp	Asn	Asp
			100					105					110		
Cys	Ser	Lys	Ile	Ile	His	Gln	Arg	Thr	Asn	Thr	Val	Pro	Phe	Asp	Leu
		115					120					125			
Val	Pro	His	Glu	Asp	Gly	Val	Asp	Val	Ala	Val	Arg	Val	Leu	Lys	Pro
	130					135					140				
Leu	Asp	Ser	Val	Asp	Leu	Gly	Leu	Glu	Thr	Val	Tyr	Glu	Lys	Phe	His
	145					150				155					160
Pro	Ser	Ile	Gln	Ser	Phe	Thr	Asp	Val	Ile	Gly	His	Tyr	Ile	Ser	Gly
				165						170					175
Glu	Arg	Pro	Lys	Gly	Ile	Gln	Glu	Thr	Glu	Glu	Met	Leu	Lys	Val	Gly
			180					185					190		
Ala	Thr	Leu	Thr	Gly	Val	Gly	Glu	Leu	Val	Leu	Asp	Asn	Asn	Ser	Val
		195					200					205			
Arg	Leu	Gln	Pro	Pro	Lys	Gln	Gly	Met	Gln	Tyr	Tyr	Leu	Ser	Ser	Gln
	210					215					220				
Asp	Phe	Asp	Ser	Leu	Leu	Gln	Arg	Gln	Glu	Ser	Ser	Val	Arg	Leu	Trp
	225					230				235					240
Lys	Val	Leu	Ala	Leu	Val	Phe	Gly	Phe	Ala	Thr	Cys	Ala	Thr	Leu	Phe
				245						250					255
Phe	Ile	Leu	Arg	Lys	Gln	Tyr	Leu	Gln	Arg	Gln	Glu	Arg	Leu	Arg	Leu
			260					265					270		
Lys	Gln	Met	Gln	Glu	Glu	Phe	Gln	Glu	His	Glu	Ala	Gln	Leu	Leu	Ser
		275					280					285			
Arg	Ala	Lys	Pro	Glu	Asp	Arg	Glu	Ser	Leu	Lys	Ser	Ala	Cys	Val	Val
	290					295					300				
Cys	Leu	Ser	Ser	Phe	Lys	Ser	Cys	Val	Phe	Leu	Glu	Cys	Gly	His	Val
	305					310				315					320
Cys	Ser	Cys	Thr	Glu	Cys	Tyr	Arg	Ala	Leu	Pro	Glu	Pro	Lys	Lys	Cys

325 330 335

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340 345 350

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Met Glu Ser Gly
1
ggg cgg ccc tcg ctg tgc cag ttc atc ctc ctg ggc acc acc tct gtg 162
Gly Arg Pro Ser Leu Cys Gln Phe Ile Leu Leu Gly Thr Thr Ser Val
5 10 15 20
gtc acc gcc gcc ctg tac tcc gtg tac cgg cag aag gcc cgg gtc tcc 210
Val Thr Ala Ala Leu Tyr Ser Val Tyr Arg Gln Lys Ala Arg Val Ser
25 30 35
caa gag ctc aag gga gct aaa aaa gtt cat ttg ggt gaa gat tta aag 258
Gln Glu Leu Lys Gly Ala Lys Lys Val His Leu Gly Glu Asp Leu Lys
40 45 50
agt att ctt tca gaa gct cca gga aaa tgc gtg cct tat gct gtt ata 306
Ser Ile Leu Ser Glu Ala Pro Gly Lys Cys Val Pro Tyr Ala Val Ile
55 60 65
gaa gga gct gtg cgg tct gtt aaa gaa acg ctt aac agc cag ttt gtg 354
Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn Ser Gln Phe Val
70 75 80
gaa aac tgc aag ggg gta att cag cgg ctg aca ctt cag gag cac aag 402
Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu Gln Glu His Lys
85 90 95 100
atg gtg tgg aat cga acc acc cac ctt tgg aat gat tgc tca aag atc 450
Met Val Trp Asn Arg Thr Thr His Leu Trp Asn Asp Cys Ser Lys Ile
105 110 115
att cat cag agg acc aac aca gtg ccc ttt gac ctg gtg ccc cac gag 498
Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu Val Pro His Glu
120 125 130
gat ggc gtg gat gtg gct gtg cga gtg ctg aag ccc ctg gac tca gtg 546
Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro Leu Asp Ser Val
135 140 145

gat ctg ggt cta gag act gtg tat gag aag ttc cac ccc tcg att cag 594
 Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His Pro Ser Ile Gln
 150 155 160

tcc ttc acc gat gtc atc ggc cac tac atc agc ggt gag cgg ccc aaa 642
 Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly Glu Arg Pro Lys
 165 170 175 180

ggc atc caa gag acc gag gag atg ctg aag gtg ggg gcc acc ctc aca 690
 Gly Ile Gln Glu Thr Glu Glu Met Leu Lys Val Gly Ala Thr Leu Thr
 185 190 195

ggg gtt ggc gaa ctg gtc ctg gac aac aac tct gtc cgc ctg cag ccg 738
 Gly Val Gly Glu Leu Val Leu Asp Asn Asn Ser Val Arg Leu Gln Pro
 200 205 210

ccc aaa caa ggc atg cag tac tat cta agc agc cag gac ttc gac agc 786
 Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln Asp Phe Asp Ser
 215 220 225

ctg ctg cag agg cag gag tcg agc gtc agg ctc tgg aag gtg ctg gcg 834
 Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp Lys Val Leu Ala
 230 235 240

ctg gtt ttt ggc ttt gcc aca tgt gcc acc ctc ttc ttc att ctc cgg 882
 Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe Phe Ile Leu Arg
 245 250 255 260

aag cag tat ctg cag cgg cag gag cgc ctg cgc ctc aag cag atg cag 930
 Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu Lys Gln Met Gln
 265 270 275

gag gag ttc cag gag cat gag gcc cag ctg ctg agc cga gcc aag cct 978
 Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser Arg Ala Lys Pro
 280 285 290

gag gac agg gag agt ctg aag agc gcc tgt gta gtg tgt ctg agc agc 1026
 Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val Cys Leu Ser Ser
 295 300 305

ttc aag tcc tgc gtc ttt ctg gag tgt ggg cac gtt tgt tcc tgc acc 1074
 Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val Cys Ser Cys Thr
 310 315 320

gag tgc tac cgc gcc ttg cca gag ccc aag aag tgc cct atc tgc aga 1122
 Glu Cys Tyr Arg Ala Leu Pro Glu Pro Lys Lys Cys Pro Ile Cys Arg
 325 330 335 340

cag gcg atc acc cgg gtg ata ccc ccg tac aac agc taatagtttg 1168
 Gln Ala Ile Thr Arg Val Ile Pro Pro Tyr Asn Ser
 345 350

gaagccgcac agcttgacct ggaagcacc ctgccccctt ttcagggatt tttatctcga 1228

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gagcctttta gtgcaagaca gatggggctg ttttcccca cctctgagta gttggaggtc 2248
acatacacag ctcttttttt attgcccttt tctgcctctg aatgttcac tctcgtcctc 2308
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<212> PRT
<213> Homo sapiens

<400> 75
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20 25 30
Ala Arg Val Ser Gln Glu Leu Lys Gly Ala Lys Lys Val His Leu Gly
35 40 45
Glu Asp Leu Lys Ser Ile Leu Ser Glu Ala Pro Gly Lys Cys Val Pro
50 55 60

Tyr Ala Val Ile Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn
 65 70 75 80
 Ser Gln Phe Val Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu
 85 90 95
 Gln Glu His Lys Met Val Trp Asn Arg Thr Thr His Leu Trp Asn Asp
 100 105 110
 Cys Ser Lys Ile Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu
 115 120 125
 Val Pro His Glu Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro
 130 135 140
 Leu Asp Ser Val Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His
 145 150 155 160
 Pro Ser Ile Gln Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly
 165 170 175
 Glu Arg Pro Lys Gly Ile Gln Glu Thr Glu Glu Met Leu Lys Val Gly
 180 185 190
 Ala Thr Leu Thr Gly Val Gly Glu Leu Val Leu Asp Asn Asn Ser Val
 195 200 205
 Arg Leu Gln Pro Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln
 210 215 220
 Asp Phe Asp Ser Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp
 225 230 235 240
 Lys Val Leu Ala Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe
 245 250 255
 Phe Ile Leu Arg Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu
 260 265 270
 Lys Gln Met Gln Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser
 275 280 285
 Arg Ala Lys Pro Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val
 290 295 300
 Cys Leu Ser Ser Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val
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<400> 76

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Met Glu Ser Gly
1

ggg cgg ccc tcg ctg tgc cag ttc atc ctc ctg ggc acc acc tct gtg 162
Gly Arg Pro Ser Leu Cys Gln Phe Ile Leu Leu Gly Thr Thr Ser Val
5 10 15 20

gtc acc gcc gcc ctg tac tcc gtg tac cgg cag aag gcc cgg gtc tcc 210
Val Thr Ala Ala Leu Tyr Ser Val Tyr Arg Gln Lys Ala Arg Val Ser
25 30 35

caa gag ctc aag gga gct aaa aaa gtt cat ttg ggt gaa gat tta aag 258
Gln Glu Leu Lys Gly Ala Lys Lys Val His Leu Gly Glu Asp Leu Lys
40 45 50

agt att ctt tca gaa gct cca gga aaa tgc gtg cct tat gct gtt ata 306
Ser Ile Leu Ser Glu Ala Pro Gly Lys Cys Val Pro Tyr Ala Val Ile
55 60 65

gaa gga gct gtg cgg tct gtt aaa gaa acg ctt aac agc cag ttt gtg 354
Glu Gly Ala Val Arg Ser Val Lys Glu Thr Leu Asn Ser Gln Phe Val
70 75 80

gaa aac tgc aag ggg gta att cag cgg ctg aca ctt cag gag cac aag 402
Glu Asn Cys Lys Gly Val Ile Gln Arg Leu Thr Leu Gln Glu His Lys
85 90 95 100

atg gtg tgg aat cga acc acc cac ctt tgg aat gat tgc tca aag atc 450
Met Val Trp Asn Arg Thr His Leu Trp Asn Asp Cys Ser Lys Ile
105 110 115

att cat cag agg acc aac aca gtg ccc ttt gac ctg gtg ccc cac gag 498
Ile His Gln Arg Thr Asn Thr Val Pro Phe Asp Leu Val Pro His Glu
120 125 130

gat ggc gtg gat gtg gct gtg cga gtg ctg aag ccc ctg gac tca gtg 546
Asp Gly Val Asp Val Ala Val Arg Val Leu Lys Pro Leu Asp Ser Val
135 140 145

gat ctg ggt cta gag act gtg tat gag aag ttc cac ccc tcg att cag 594
Asp Leu Gly Leu Glu Thr Val Tyr Glu Lys Phe His Pro Ser Ile Gln
150 155 160

tcc ttc acc gat gtc atc ggc cac tac atc agc ggt gag cgg ccc aaa 642
Ser Phe Thr Asp Val Ile Gly His Tyr Ile Ser Gly Glu Arg Pro Lys
165 170 175 180

ggc atc caa gag acc gag gag atg ctg aag gtg ggg gcc acc ctc aca 690
 Gly Ile Gln Glu Thr Glu Glu Met Leu Lys Val Gly Ala Thr Leu Thr
 185 190 195

ggg gtt ggc gaa ctg gtc ctg gac aac aac tct gtc cgc ctg cag ccg 738
 Gly Val Gly Glu Leu Val Leu Asp Asn Asn Ser Val Arg Leu Gln Pro
 200 205 210

ccc aaa caa ggc atg cag tac tat cta agc agc cag gac ttc gac agc 786
 Pro Lys Gln Gly Met Gln Tyr Tyr Leu Ser Ser Gln Asp Phe Asp Ser
 215 220 225

ctg ctg cag agg cag gag tcg agc gtc agg ctc tgg aag gtg ctg gcg 834
 Leu Leu Gln Arg Gln Glu Ser Ser Val Arg Leu Trp Lys Val Leu Ala
 230 235 240

ctg gtt ttt ggc ttt gcc aca tgt gcc acc ctc ttc ttc att ctc cgg 882
 Leu Val Phe Gly Phe Ala Thr Cys Ala Thr Leu Phe Phe Ile Leu Arg
 245 250 255 260

aag cag tat ctg cag cgg cag gag cgc ctg cgc ctc aag cag atg cag 930
 Lys Gln Tyr Leu Gln Arg Gln Glu Arg Leu Arg Leu Lys Gln Met Gln
 265 270 275

gag gag ttc cag gag cat gag gcc cag ctg ctg agc cga gcc aag cct 978
 Glu Glu Phe Gln Glu His Glu Ala Gln Leu Leu Ser Arg Ala Lys Pro
 280 285 290

gag gac agg gag agt ctg aag agc gcc tgt gta gtg tgt ctg agc agc 1026
 Glu Asp Arg Glu Ser Leu Lys Ser Ala Cys Val Val Cys Leu Ser Ser
 295 300 305

ttc aag tcc tgc gtc ttt ctg gag tgt ggg cac gtt tgt tcc tgc acc 1074
 Phe Lys Ser Cys Val Phe Leu Glu Cys Gly His Val Cys Ser Cys Thr
 310 315 320

gag tgc tac cgc gcc ttg cca gag ccc aag aag tgc cct atc tgc aga 1122
 Glu Cys Tyr Arg Ala Leu Pro Glu Pro Lys Lys Cys Pro Ile Cys Arg
 325 330 335 340

cag gcg atc acc cgg gtg ata ccc ctg tac aac agc taatagtttg 1168
 Gln Ala Ile Thr Arg Val Ile Pro Leu Tyr Asn Ser
 345 350

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<400> 77
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35 40 45
Cys Leu Gly Leu Tyr Val Arg Trp Glu Lys Thr Ala Asn Ser Leu Ile
50 55 60
Leu Val Ile Phe Ile Leu Gly Leu Phe Val Leu Gly Ile Ala Ser Ile
65 70 75 80
Leu Tyr Tyr Tyr Phe Ser Met Glu Ala Ala Ser Leu Ser Leu Ser Asn
85 90 95
Leu Trp Phe Gly Phe Leu Leu Gly Leu Leu Cys Phe Leu Asp Asn Ser
100 105 110

Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr Leu Leu Leu
115 120 125

Thr Ser Ile Val Leu Arg Ile Leu Cys Ser Leu Val Glu Arg Ile Ser
130 135 140

Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val Glu Phe Leu
145 150 155 160

Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu Val Glu Lys
165 170 175

Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met Leu Ile Ile
180 185 190

Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Pro Asn Leu Val Ile Phe
195 200 205

Ala Val Leu Leu Phe Phe Ser Ser Leu Glu Thr Pro Lys Asn Pro Ile
210 215 220

Ala Phe Ala Cys Phe Phe Ile Cys Leu Ile Thr Asp Pro Phe Leu Asp
225 230 235 240

Ile Tyr Phe Ser Gly Leu Ser Val Thr Glu Arg Trp Lys Pro Phe Leu
245 250 255

Tyr Arg Gly Arg Ile Cys Arg Arg Leu Ser Val Val Phe Ala Gly Met
260 265 270

Ile Glu Leu Thr Phe Phe Ile Leu Ser Ala Phe Lys Leu Arg Asp Thr
275 280 285

His Leu Trp Tyr Phe Val Ile Pro Gly Phe Ser Ile Phe Gly Ile Phe
290 295 300

Trp Met Ile Cys His Ile Ile Phe Leu Leu Thr Leu Trp Gly Phe His
305 310 315 320

Thr Lys Leu Asn Asp Cys His Lys Val Tyr Phe Thr His Arg Thr Asp
325 330 335

Tyr Asn Ser Leu Asp Arg Ile Met Ala Ser Lys Gly Met Arg His Phe
340 345 350

Cys Leu Ile Ser Glu Gln Leu Val Phe Phe Ser Leu Leu Ala Thr Ala
355 360 365

Ile Leu Gly Ala Val Ser Trp Gln Pro Thr Asn Gly Ile Phe Leu Ser
370 375 380

Met Phe Leu Ile Val Leu Pro Leu Glu Ser Met Ala His Gly Leu Phe
385 390 395 400

His Glu Leu Gly Asn Cys Leu Gly Gly Thr Ser Val Gly Tyr Ala Ile
405 410 415

1003-112-0300

135

aga att tct ggt tat gtc cgt cat cgg ccc act tta cta acc aca gtt	842
Arg Ile Ser Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val	
145 150 155	
gaa ttt ctg gag ctt gtt gga ttt gcc att gcc agc aca act atg ttg	890
Glu Phe Leu Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu	
160 165 170	
gtg gag aag tct ctg agt gtc att ttg ctt gtt gta gct ctg gct atg	938
Val Glu Lys Ser Leu Ser Val Ile Leu Leu Val Val Ala Leu Ala Met	
175 180 185	
ctg att att gat ctg aga atg aaa tct ttc tta gct att cca aac tta	986
Leu Ile Ile Asp Leu Arg Met Lys Ser Phe Leu Ala Ile Pro Asn Leu	
190 195 200 205	
gtt att ttt gca gtt ttg tta ttt ttt tcc tca ttg gaa act ccc aaa	1034
Val Ile Phe Ala Val Leu Leu Phe Phe Ser Ser Leu Glu Thr Pro Lys	
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225 230 235	
ttc ctt gac att tat ttt agt gga ctt tca gta act gaa aga tgg aaa	1130
Phe Leu Asp Ile Tyr Phe Ser Gly Leu Ser Val Thr Glu Arg Trp Lys	
240 245 250	
ccc ttt ttg tac cgt gga aga att tgc aga aga ctt tca gtc gtt ttt	1178
Pro Phe Leu Tyr Arg Gly Arg Ile Cys Arg Arg Leu Ser Val Val Phe	
255 260 265	
gct gga atg att gag ctt aca ttt ttt att ctt tcc gca ttc aaa ctt	1226
Ala Gly Met Ile Glu Leu Thr Phe Phe Ile Leu Ser Ala Phe Lys Leu	
270 275 280 285	
aga gac act cac ctc tgg tat ttt gta ata cct ggc ttt tcc att ttt	1274
Arg Asp Thr His Leu Trp Tyr Phe Val Ile Pro Gly Phe Ser Ile Phe	
290 295 300	
gga att ttc tgg atg att tgt cat att att ttt ctt tta act ctt tgg	1322
Gly Ile Phe Trp Met Ile Cys His Ile Ile Phe Leu Leu Thr Leu Trp	
305 310 315	
gga ttc cat acc aaa tta aat gac tgc cat aaa gta tat ttt act cac	1370
Gly Phe His Thr Lys Leu Asn Asp Cys His Lys Val Tyr Phe Thr His	
320 325 330	
agg aca gat tac aat agc ctt gat aga atc atg gca tcc aaa ggg atg	1418
Arg Thr Asp Tyr Asn Ser Leu Asp Arg Ile Met Ala Ser Lys Gly Met	
335 340 345	
cgc cat ttt tgc ttg att tca gag cag ttg gtg ttc ttt agt ctt ctt	1466
Arg His Phe Cys Leu Ile Ser Glu Gln Leu Val Phe Phe Ser Leu Leu	
350 355 360 365	
gca aca gcg att ttg gga gca gtt tcc tgg cag cca aca aat gga att	1514

Ala	Thr	Ala	Ile	Leu	Gly	Ala	Val	Ser	Trp	Gln	Pro	Thr	Asn	Gly	Ile	
				370					375					380		
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Phe	Leu	Ser	Met	Phe	Leu	Ile	Val	Leu	Pro	Leu	Glu	Ser	Met	Ala	His	
			385					390					395			
ggg	ctc	ttc	cat	gaa	ttg	ggg	aac	tgt	tta	gga	gga	aca	tct	gtt	gga	1610
Gly	Leu	Phe	His	Glu	Leu	Gly	Asn	Cys	Leu	Gly	Gly	Thr	Ser	Val	Gly	
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Tyr	Ala	Ile	Val	Ile	Pro	Thr	Asn	Phe	Cys	Ser	Pro	Asp	Gly	Gln	Pro	
	415					420					425					
aca	ctg	ctt	ccc	cca	gaa	cat	gta	cag	gag	tta	aat	ttg	agg	tct	act	1706
Thr	Leu	Leu	Pro	Pro	Glu	His	Val	Gln	Glu	Leu	Asn	Leu	Arg	Ser	Thr	
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Gly	Met	Leu	Asn	Ala	Ile	Gln	Arg	Phe	Phe	Ala	Tyr	His	Met	Ile	Glu	
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acc	tat	gga	tgt	gac	tat	tcc	aca	agt	gga	ctg	tca	ttt	gat	act	ctg	1802
Thr	Tyr	Gly	Cys	Asp	Tyr	Ser	Thr	Ser	Gly	Leu	Ser	Phe	Asp	Thr	Leu	
			465					470					475			
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His	Ser	Lys	Leu	Lys	Ala	Phe	Leu	Glu	Leu	Arg	Thr	Val	Asp	Gly	Pro	
		480					485					490				
aga	cat	gat	acg	tat	att	ttg	tat	tac	agt	ggg	cac	acc	cat	ggg	aca	1898
Arg	His	Asp	Thr	Tyr	Ile	Leu	Tyr	Tyr	Ser	Gly	His	Thr	His	Gly	Thr	
	495					500					505					
gga	gag	tgg	gct	cta	gca	ggg	gga	gat	aca	cta	cgc	ctt	gac	aca	ctt	1946
Gly	Glu	Trp	Ala	Leu	Ala	Gly	Gly	Asp	Thr	Leu	Arg	Leu	Asp	Thr	Leu	
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Ile	Glu	Trp	Trp	Arg	Glu	Lys	Asn	Gly	Ser	Phe	Cys	Ser	Arg	Leu	Ile	
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Ile	Val	Leu	Asp	Ser	Glu	Asn	Ser	Thr	Pro	Trp	Val	Lys	Glu	Val	Arg	
			545					550					555			
aaa	att	aat	gac	cag	tat	att	gca	gtg	caa	gga	gca	gag	ttg	ata	aaa	2090
Lys	Ile	Asn	Asp	Gln	Tyr	Ile	Ala	Val	Gln	Gly	Ala	Glu	Leu	Ile	Lys	
		560					565					570				
aca	gta	gat	att	gaa	gaa	gct	gac	ccg	cca	cag	cta	ggg	gac	ttt	aca	2138
Thr	Val	Asp	Ile	Glu	Glu	Ala	Asp	Pro	Pro	Gln</						

590 595 600 605

act gaa aag gga cgc aca gtg aaa gca gta tat ggt gtg tca aaa cgg 2234
 Thr Glu Lys Gly Arg Thr Val Lys Ala Val Tyr Gly Val Ser Lys Arg
 610 615 620

tgg agt gac tac act ctg cat ttg cca acg gga agc gat gtg gcc aag 2282
 Trp Ser Asp Tyr Thr Leu His Leu Pro Thr Gly Ser Asp Val Ala Lys
 625 630 635

cac tgg atg tta cac ttt cct cgt att aca tat ccc cta gtg cat ttg 2330
 His Trp Met Leu His Phe Pro Arg Ile Thr Tyr Pro Leu Val His Leu
 640 645 650

gca aat tgg tta tgc ggt ctg aac ctt ttt tgg atc tgc aaa act tgt 2378
 Ala Asn Trp Leu Cys Gly Leu Asn Leu Phe Trp Ile Cys Lys Thr Cys
 655 660 665

ttt agg tgc ttg aaa aga tta aaa atg agt tgg ttt ctt cct act gtg 2426
 Phe Arg Cys Leu Lys Arg Leu Lys Met Ser Trp Phe Leu Pro Thr Val
 670 675 680 685

ctg gac aca gga caa ggc ttc aaa ctt gtc aaa tct taatttggac 2472
 Leu Asp Thr Gly Gln Gly Phe Lys Leu Val Lys Ser
 690 695

cccaaagcgg gatattaata agcactcata ctaccaatta tcactaactt gccatttttt 2532

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tcttttctta agtaattatg gtatatataa ggcgttgggg aaaaacattt tataatgaaa 2652

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tgggtcaatga tgaattacta atgccttatt ttctagggcat ataataatag tttagagaat 2832

gtagaccaga taaatttggt tactgtttta agaaaactac cagtttactt acagaagatt 2892

cttttttcca aacagtaggt ttcatccaag accatttgaa gaactgcaaa ctctttctct 2952

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 <212> PRT
 <213> Homo sapiens

<400> 79
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Lys Glu Glu Ser Thr Lys Tyr Leu Leu Leu Thr Ser Ile Val Leu Arg
 35 40 45
 Ile Leu Cys Ser Leu Val Glu Arg Ile Ser Gly Tyr Val Arg His Arg
 50 55 60
 Pro Thr Leu Leu Thr Thr Val Glu Phe Leu Glu Leu Val Gly Phe Ala
 65 70 75 80
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 Leu Val Val Ala Leu Ala Met Leu Ile Ile Asp Leu Arg Met Lys Ser
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 Ile Pro Gly Phe Ser Ile Phe Gly Ile Phe Trp Met Ile Cys His Ile
 210 215 220
 Ile Phe Leu Leu Thr Leu Trp Gly Phe His Thr Lys Leu Asn Asp Cys
 225 230 235 240
 His Lys Val Tyr Phe Thr His Arg Thr Asp Tyr Asn Ser Leu Asp Arg
 245 250 255
 Ile Met Ala Ser Lys Gly Met Arg His Phe Cys Leu Ile Ser Glu Gln
 260 265 270
 Leu Val Phe Phe Ser Leu Leu Ala Thr Ala Ile Leu Gly Ala Val Ser
 275 280 285
 Trp Gln Pro Thr Asn Gly Ile Phe Leu Ser Met Phe Leu Ile Val Leu
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 Pro Leu Glu Ser Met Ala His Gly Leu Phe His Glu Leu Gly Asn Cys
 305 310 315 320
 Leu Gly Gly Thr Ser Val Gly Tyr Ala Ile Val Ile Pro Thr Asn Phe
 325 330 335

Cys Ser Pro Asp Gly Gln Pro Thr Leu Leu Pro Pro Glu His Val Gln
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 Glu Leu Asn Leu Arg Ser Thr Gly Met Leu Asn Ala Ile Gln Arg Phe
 355 360 365
 Phe Ala Tyr His Met Ile Glu Thr Tyr Gly Cys Asp Tyr Ser Thr Ser
 370 375 380
 Gly Leu Ser Phe Asp Thr Leu His Ser Lys Leu Lys Ala Phe Leu Glu
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 405 410 415
 Ser Gly His Thr His Gly Thr Gly Glu Trp Ala Leu Ala Gly Gly Asp
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 Thr Leu Arg Leu Asp Thr Leu Ile Glu Trp Trp Arg Glu Lys Asn Gly
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 Pro Trp Val Lys Glu Val Arg Lys Ile Asn Asp Gln Tyr Ile Ala Val
 465 470 475 480
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 Pro Gln Leu Gly Asp Phe Thr Lys Asp Trp Val Glu Tyr Asn Cys Asn
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 Thr Tyr Pro Leu Val His Leu Ala Asn Trp Leu Cys Gly Leu Asn Leu
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 Phe Trp Ile Cys Lys Thr Cys Phe Arg Cys Leu Lys Arg Leu Lys Met
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<213> Homo sapiens

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<222> (629)..(2461)

<400> 80

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aaaaacagca aattccttaa ttttggtaat ttttattctt ggtctttttg ttcttggaat 600
cgccagcata ctctattact atttttca atg gaa gca gca agt tta agt ctc 652
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                        1           5

tcc aat ctt tgg ttt gga ttc ttg ctt ggc ctc cta tgt ttt ctt gat 700
Ser Asn Leu Trp Phe Gly Phe Leu Leu Gly Leu Leu Cys Phe Leu Asp
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Asn Ser Ser Phe Lys Asn Asp Val Lys Glu Glu Ser Thr Lys Tyr Leu
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ctt cta aca tcc ata gtg tta agg ata ttg tgc tct ctg gtg gag aga 796
Leu Leu Thr Ser Ile Val Leu Arg Ile Leu Cys Ser Leu Val Glu Arg
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Ile Ser Gly Tyr Val Arg His Arg Pro Thr Leu Leu Thr Thr Val Glu
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Phe Leu Glu Leu Val Gly Phe Ala Ile Ala Ser Thr Thr Met Leu Val
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gag aag tct ctg agt gtc att ttg ctt gtt gta gct ctg gct atg ctg 940
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ccg Pro	att Ile	gct Ala	ttt Phe 140	gcg Ala	tgt Cys	ttt Phe	ttt Phe	att Ile 145	tgc Cys	ctg Leu	ata Ile	act Thr	gat Asp 150	cct Pro	ttc Phe	1084
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gga Gly 185	atg Met	att Ile	gag Glu	ctt Leu 190	aca Thr	ttt Phe	ttt Phe	att Ile	ctt Leu 195	tcc Ser	gca Ala	ttc Phe	aaa Lys	ctt Leu 200	aga Arg	1228
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aca Thr 250	gat Asp	tac Tyr	aat Asn	agc Ser	ctt Leu	gat Asp 255	aga Arg	atc Ile	atg Met	gca Ala	tcc Ser 260	aaa Lys	ggg Gly	atg Met	cgc Arg	1420
cat His 265	ttt Phe	tgc Cys	ttg Leu	att Ile 270	tca Ser	gag Glu	cag Gln	ttg Leu	gtg Val	ttc Phe 275	ttt Phe	agt Ser	ctt Leu	ctt Leu 280	gca Ala	1468
aca Thr	gcg Ala	att Ile	ttg Leu 285	gga Gly	gca Ala	gtt Val	tcc Ser	tgg Trp 290	cag Gln	cca Pro	aca Thr	aat Asn	gga Gly	att Ile 295	ttc Phe	1516
ttg Leu	agc Ser	atg Met 300	ttt Phe	cta Leu	atc Ile	gtt Val	ttg Leu 305	cca Pro	ttg Leu	gaa Glu	tcc Ser	atg Met 310	gct Ala	cat His	ggg Gly	1564
ctc Leu	ttc Phe	cat His 315	gaa Glu	ttg Leu	ggt Gly	aac Asn 320	tgt Cys	tta Leu	gga Gly	gga Gly	aca Thr	tct Ser 325	gtt Val	gga Gly	tat Tyr	1612
gct Ala	att Ile	gtg Val	att Ile	ccc Pro	acc Thr	aac Asn	ttc Phe	tgc Cys	agt Ser	cct Pro	gat Asp	ggg Gly	cag Gln	cca Pro	aca Thr	1660

330	335	340	
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atg ctc aat gct atc caa aga ttt ttt gca tat cat atg att gag acc Met Leu Asn Ala Ile Gln Arg Phe Phe Ala Tyr His Met Ile Glu Thr 365 370 375			1756
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tcc aaa cta aaa gct ttc ctc gaa ctt cgg aca gtg gat gga ccc aga Ser Lys Leu Lys Ala Phe Leu Glu Leu Arg Thr Val Asp Gly Pro Arg 395 400 405			1852
cat gat acg tat att ttg tat tac agt ggg cac acc cat ggt aca gga His Asp Thr Tyr Ile Leu Tyr Tyr Ser Gly His Thr His Gly Thr Gly 410 415 420			1900
gag tgg gct cta gca ggt gga gat aca cta cgc ctt gac aca ctt ata Glu Trp Ala Leu Ala Gly Gly Asp Thr Leu Arg Leu Asp Thr Leu Ile 425 430 435 440			1948
gaa tgg tgg aga gaa aag aat ggt tcc ttt tgt tcc cgg ctt att atc Glu Trp Trp Arg Glu Lys Asn Gly Ser Phe Cys Ser Arg Leu Ile Ile 445 450 455			1996
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agt gac tac act ctg cat ttg cca acg gga agc gat gtg gcc aag cac Ser Asp Tyr Thr Leu His Leu Pro Thr Gly Ser Asp Val Ala Lys His 540 545 550			2284
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Tyr Arg Cys Met Val Arg Phe Gly Glu Tyr Gln Phe Leu Met Glu Lys		
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Glu Asp Gly Glu Ser Leu Glu Phe Phe Glu Thr Gln Phe Ile Leu Ser		
130	135	140
Pro Arg Ser Leu Leu Gln Glu Asn Asn Trp Pro Pro His Arg Pro Ile		
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Pro Glu Tyr Gly Thr Tyr Ser Leu Cys Ser Ser Gln Ser Ser Ser Pro		
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Thr Glu Met Asp Glu Asn Glu Ser		
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (285)..(836)

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 Met Thr Ser Phe
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 gaa gat gct gac aca gaa gag aca gta act tgt ctc cag atg acg gtt 344
 Glu Asp Ala Asp Thr Glu Glu Thr Val Thr Cys Leu Gln Met Thr Val
 5 10 15 20
 tac cat cct ggc cag ttg cag tgt gga ata ttt cag tca ata agt ttt 392
 Tyr His Pro Gly Gln Leu Gln Cys Gly Ile Phe Gln Ser Ile Ser Phe
 25 30 35
 aac aga gag aaa ctc cct tcc agc gaa gtg gtg aaa ttt ggc cga aat 440
 Asn Arg Glu Lys Leu Pro Ser Ser Glu Val Val Lys Phe Gly Arg Asn
 40 45 50
 tcc aac atc tgt cat tat act ttt cag gac aaa cag gtt tcc cga gtt 488
 Ser Asn Ile Cys His Tyr Thr Phe Gln Asp Lys Gln Val Ser Arg Val
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(The following information was obtained from the records of the Federal Bureau of Investigation.)

<210> 83

<211> 392

<212> PRT

<213> Homo sapiens

<400> 83

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Gln Leu Trp Phe Phe Arg Phe Val Val Asn Ala Ala Gly Tyr Ala Ser
 35 40 45

Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn
 50 55 60

Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys
 65 70 75 80

Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro
 85 90 95

Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu
 100 105 110

Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val
 115 120 125

Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser
 130 135 140

Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg
 145 150 155 160

Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln
 165 170 175

Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser
 180 185 190

Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser
 195 200 205

Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met
 210 215 220

Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr
 225 230 235 240

Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser
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Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu
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<212> DNA
<213> Homo sapiens
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<221> CDS
<222> (119)..(1294)
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atg	gac	gcc	aga	tgg	tgg	gca	gtg	gtg	gtg	ctg	gct	gcg	ttc	ccc	tcc		166
Met	Asp	Ala	Arg	Trp	Trp	Ala	Val	Val	Val	Leu	Ala	Ala	Phe	Pro	Ser		
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Leu	Gly	Ala	Gly	Gly	Glu	Thr	Pro	Glu	Ala	Pro	Pro	Glu	Ser	Trp	Thr		
			20					25					30				
cag cta tgg ttc ttc cga ttt gtg gtg aat gct gct ggc tat gcc agc																	262
Gln	Leu	Trp	Phe	Phe	Arg	Phe	Val	Val	Asn	Ala	Ala	Gly	Tyr	Ala	Ser		
		35					40					45					
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Phe	Met	Val	Pro	Gly	Tyr	Leu	Leu	Val	Gln	Tyr	Phe	Arg	Arg	Lys	Asn		
	50					55					60						
tac ctg gag acc ggt agg ggc ctc tgc ttt ccc ctg gtg aaa gct tgt																	358
Tyr	Leu	Glu	Thr	Gly	Arg	Gly	Leu	Cys	Phe	Pro	Leu	Val	Lys	Ala	Cys		

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Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro	85	90	95	
cga aca gag gcg gca gag acc acc ccg atg tgg cag gcc ctg aag ctg				454
Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu	100	105	110	
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Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val	115	120	125	
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Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser	130	135	140	
ccg ggt gag cgc ttt acg gac tcg cag ttc ctg gtg cta atg aac cga				598
Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg	145	150	155	160
gtg ctg gca ctg att gtg gct ggc ctc tcc tgt gtt ctc tgc aag cag				646
Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln	165	170	175	
ccc cgg cat ggg gca ccc atg tac cgg tac tcc ttt gcc agc ctg tcc				694
Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser	180	185	190	
aat gtg ctt agc agc tgg tgc caa tac gaa gct ctt aag ttc gtc agc				742
Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser	195	200	205	
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Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met	210	215	220	
ctg atg gga aag ctt gtg tct cgg cgc agc tac gaa cac tgg gag tac				838
Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr	225	230	235	240
ctg aca gcc acc ctc atc tcc att ggg gtc agc atg ttt ctg cta tcc				886
Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser	245	250	255	
agc gga cca gag ccc cgc agc tcc cca gcc acc aca ctc tca ggc ctc				934
Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu	260	265	270	
ttc aca gtg ggc tca ctg cta gaa cag ggg gcc cta ctg gag gga acc				982
Phe Thr Val Gly Ser Leu Leu Glu Gln Gly Ala Leu Leu Glu Gly Thr	275	280	285	
cgc ttc atg ggg cga cac agt gag ttt gct gcc cat gcc ctg cta ctc				1030
Arg Phe Met Gly Arg His Ser Glu Phe Ala Ala His Ala Leu Leu Leu	290	295	300	

150

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 Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn
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 Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys
 65 70 75 80
 Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro
 85 90 95
 Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu
 100 105 110
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 115 120 125
 Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser
 130 135 140
 Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg
 145 150 155 160
 Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln
 165 170 175
 Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser
 180 185 190
 Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser
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 Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met
 210 215 220
 Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr
 225 230 235 240
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 Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu
 260 265 270
 Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp
 275 280 285
 Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe
 290 295 300
 Gly Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu
 305 310 315 320
 Gln Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu
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$\frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} f(x) \delta(x-a) dx = f(a)$

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<210> 86
<211> 2018
<212> DNA
<213> Homo sapiens
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<222> (119)..(1414)
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Met	Asp	Ala	Arg	Trp	Trp	Ala	Val	Val	Val	Leu	Ala	Ala	Phe	Pro	Ser	
1				5					10					15		
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Leu	Gly	Ala	Gly	Gly	Glu	Thr	Pro	Glu	Ala	Pro	Pro	Glu	Ser	Trp	Thr	
			20					25					30			
cag cta tgg ttc ttc cga ttt gtg gtg aat gct gct ggc tat gcc agc																262
Gln	Leu	Trp	Phe	Phe	Arg	Phe	Val	Val	Asn	Ala	Ala	Gly	Tyr	Ala	Ser	
		35					40					45				
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Phe	Met	Val	Pro	Gly	Tyr	Leu	Leu	Val	Gln	Tyr	Phe	Arg	Arg	Lys	Asn	
	50					55					60					
tac ctg gag acc ggt agg ggc ctc tgc ttt ccc ctg gtg aaa gct tgt																358
Tyr	Leu	Glu	Thr	Gly	Arg	Gly	Leu	Cys	Phe	Pro	Leu	Val	Lys	Ala	Cys	
	65				70					75					80	
gtg ttt ggc aat gag ccc aag gcc tct gat gag gtt ccc ctg gcg ccc																406
Val	Phe	Gly	Asn	Glu	Pro	Lys	Ala	Ser	Asp	Glu	Val	Pro	Leu	Ala	Pro	
				85					90				95			

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ctc Leu	ttc Phe	tgt Cys 115	gcc Ala	aca Thr	ggg Gly	ctc Leu	cag Gln	gtg Val	tct Ser	tat Tyr	ctg Leu	act Thr	tgg Trp	ggg Gly	gtg Val	502
ctg Leu	cag Gln	gaa Glu	aga Arg	gtg Val	atg Met	acc Thr	cgc Arg	agc Ser	tat Tyr	ggg Gly	gcc Ala	aca Thr	gcc Ala	aca Thr	tca Ser	550
ccg Pro	ggg Gly	gag Glu	cgc Arg	ttt Phe	acg Thr	gac Asp	tcg Ser	cag Gln	ttc Phe	ctg Leu	gtg Val	cta Leu	atg Met	aac Asn	cga Arg	598
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Leu Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr
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Ile Ile Met Thr Leu Arg Gln Ala Phe Ala Ile Leu Leu Ser Cys Leu
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Lys Arg His Ser Val Asp Thr Ser Pro Gly Tyr His Glu Ser Asp Ser	
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Phe	Lys	Ser	Val	Leu	Leu	Ile	Tyr	Thr	Phe	Ile	Phe	Trp	Ile	Thr	Gly	
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Asp Trp Thr Asp Thr Asn Tyr Tyr Ser Glu Lys Gly Phe Pro Lys Ser
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Cys Cys Lys Leu Glu Asp Cys Thr Pro Gln Arg Asp Ala Asp Lys Val
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 Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
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Asp	Val	Ser	Glu	Pro	Ile	Val	Phe	Leu	Gln	Gln	Met	Gln	Glu	Phe	Arg
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Glu	Lys	Ile	Lys	Val	Ile	Lys	Glu	Thr	Pro	Leu	Pro	Pro	Ser	Asn	Leu
			260					265					270		
Pro	Ala	Ser	Pro	Leu	Met	Lys	Asn	Phe	Asp	Thr	Ser	Gln	Trp	Glu	Asp
		275					280					285			
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Thr	Phe	Ile	Ser	Lys	Ile	Pro	Trp	Ser	Phe	Tyr	Lys	Leu	Phe	Leu	Leu
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Ile	Leu	Leu	Leu	Gly	Leu	Val	Ile	Val	Phe	Gly	Pro	Thr	Met	Phe	Leu
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			340					345					350		

Asn Phe Ser Ser Tyr Leu Thr Lys Thr Ala Asp Phe Ile Glu Gln Ser
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Val Phe Tyr Trp Glu Gln Val Thr Asp Gly Phe Phe Ile Phe Asn Glu
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Met Glu Leu Leu Glu Glu Asp Leu Thr Cys Pro Ile Cys Cys Ser Leu
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Phe Asp Asp Pro Arg Val Leu Pro Cys Ser His Asn Phe Cys Lys Lys
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Cys Leu Glu Gly Ile Leu Glu Gly Ser Val Arg Asn Ser Leu Trp Arg
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Lys Tyr Asn Lys Ile Lys Ile Ser Pro Lys Met Pro Val Cys Lys Gly
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cac ttg ggg cag cct ctc aac att ttc tgc ctg act gat atg cag ctg 516
His Leu Gly Gln Pro Leu Asn Ile Phe Cys Leu Thr Asp Met Gln Leu
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Cys Ser Ile Glu Asp Ala Tyr Ala Gln Glu Arg Asp Ala Phe Glu Ser	
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Lys Asp Ser Asp Lys Val Lys Glu Phe Phe Glu Lys Leu Gln His Thr	
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Glu Lys Ile Lys Val Ile Lys Glu Thr Pro Leu Pro Pro Ser Asn Leu	
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Pro Ala Ser Pro Leu Met Lys Asn Phe Asp Thr Ser Gln Trp Glu Asp	
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Thr Phe Ile Ser Lys Ile Pro Trp Ser Phe Tyr Lys Leu Phe Leu Leu	
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Gln Lys Ile Arg Ser Asp Phe Lys Asn Leu Gln Cys Phe Leu His Glu
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Ala Val Lys Leu Glu Thr Ser Glu Ala Val Ser Leu Glu Leu His Thr
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Ser His Gln Val Ser Val Thr Leu Asp Pro Asp Thr Ala His His Glu
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Glu Asn Gln Asp Thr Ser Ser Arg Arg Phe Thr Ala Phe Pro Cys Val
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Val Gly Glu Gly Thr Gly Trp Asp Leu Gly Val Cys Met Glu Asn Val
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370 375 380

Leu Arg Leu Cys Lys Lys Lys Gly Tyr Val Ala Leu Thr Ser Pro Pro
385 390 395 400

Thr Ser Leu His Leu His Glu Gln Pro Leu Leu Val Gly Ile Phe Leu
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Asp Tyr Glu Ala Gly Val Val Ser Phe Tyr Asn Gly Asn Thr Gly Cys
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His Ile Phe Thr Phe Pro Lys Ala Ser Phe Ser Asp Thr Leu Arg Pro
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Tyr Phe Gln Val Tyr Gln Tyr Ser Pro Leu Phe Leu Pro Pro Pro Gly
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 Gln Lys Gln Leu Arg Gln Glu Thr Phe Cys Cys Pro Gln Cys Arg Ala
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Pro Phe His Met Asp Ser Leu Arg Pro Asn Lys Gln Leu Gly Ser Leu
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Ile Glu Ala Leu Lys Glu Thr Asp Gln Glu Met Ser Cys Glu Glu His
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Gly Glu Gln Phe His Leu Phe Cys Glu Asp Glu Gly Gln Leu Ile Cys
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Trp Arg Cys Glu Arg Ala Pro Gln His Lys Gly His Thr Thr Ala Leu
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Thr Lys Leu Lys Gln Leu Glu Asp Arg Cys Thr Glu Gln Lys Leu Ser
145 150 155 160

Thr Ala Met Arg Ile Thr Lys Trp Lys Glu Lys Val Gln Ile Gln Arg
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Gln Lys Ile Arg Ser Asp Phe Lys Asn Leu Gln Cys Phe Leu His Glu
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Glu Glu Lys Ser Tyr Leu Trp Arg Leu Glu Lys Glu Glu Gln Gln Thr
195 200 205

Leu Ser Arg Leu Arg Asp Tyr Glu Ala Gly Leu Gly Leu Lys Ser Asn
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Glu Leu Lys Ser His Ile Leu Glu Leu Glu Glu Lys Cys Gln Gly Ser
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Ala Gln Lys Leu Leu Gln Asn Val Asn Asp Thr Leu Ser Arg Ser Trp
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Ala Val Lys Leu Glu Thr Ser Glu Ala Val Ser Leu Glu Leu His Thr
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Ser His Gln Val Ser Val Thr Leu Asp Pro Asp Thr Ala His His Glu
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Glu Asn Gln Asp Thr Ser Ser Arg Arg Phe Thr Ala Phe Pro Cys Val
325 330 335

Leu Gly Cys Glu Gly Phe Thr Ser Gly Arg Arg Tyr Phe Glu Val Asp
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Val Gly Glu Gly Thr Gly Trp Asp Leu Gly Val Cys Met Glu Asn Val
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Val Lys Leu Glu Thr Ser Glu Ala Val Ser Leu Glu Leu His Thr Met
260 265 270

tgc aat gtt tcc aag ctt tac ttc gat gtg aag aaa atg tta agg agt 1343
Cys Asn Val Ser Lys Leu Tyr Phe Asp Val Lys Lys Met Leu Arg Ser
275 280 285

cat caa gtt agt gtg act ctg gat cca gat aca gct cat cac gaa cta 1391
His Gln Val Ser Val Thr Leu Asp Pro Asp Thr Ala His His Glu Leu
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310 315 320

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Gly Cys Glu Gly Phe Thr Ser Gly Arg Arg Tyr Phe Glu Val Asp Val
340 345 350

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355 360 365

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370 375 380 385

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Arg Leu Cys Lys Lys Lys Gly Tyr Val Ala Leu Thr Ser Pro Pro Thr
390 395 400

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Tyr Glu Ala Gly Val Val Ser Phe Tyr Asn Gly Asn Thr Gly Cys His
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 Tyr Arg Cys Ile Arg Glu Ala Arg Tyr Thr Met Pro Ser Ser Leu Leu
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 Ala Pro Ala Lys His Leu Ile Ala Ser Met Leu Ser Lys Asn Pro Glu
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 Asp Arg Pro Ser Leu Asp Asp Ile Ile Arg His Asp Phe Phe Leu Gln
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 Gly Phe Thr Pro Asp Arg Leu Ser Ser Ser Cys Cys His Thr Val Pro
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Lys	Val	Leu	Thr	Glu	Pro	Glu	Val	Arg	Tyr	Tyr	Leu	Arg	Gln	Ile	Val		
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Gln	Gly	His	Gly	Cys	Glu	Ser	Asp	Ile	Trp	Ala	Leu	Gly	Cys	Val	Met		
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	400					405					410						
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Leu	Glu	Asp	Ser	Thr	Met	Gly	Ser	Val	Ala	Asp	Thr	Val	Ala	Arg	Val		
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gag	cag	ctg	agc	aca	tca	ttt	cag	tgg	gtc	acc	aaa	tgg	gtt	gat	tac	1657	
Glu	Gln	Leu	Ser	Thr	Ser	Phe	Gln	Trp	Val	Thr	Lys	Trp	Val	Asp	Tyr		
	495				500				505						510		
tct	aac	aaa	tat	ggc	ttt	ggg	tac	cag	ctc	tca	gac	cac	acc	gtc	ggg	1705	
Ser	Asn	Lys	Tyr	Gly	Phe	Gly	Tyr	Gln	Leu	Ser	Asp	His	Thr	Val	Gly		
			515					520						525			
gtc	ctt	ttc	aac	aat	ggg	gct	cac	atg	agc	ctc	ctt	cca	gac	aaa	aaa	1753	
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Met Ser Val Pro Gly Pro Tyr Gln Ala Ala Thr Gly Pro Ser
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1	5	10	
tca gca cca tcc gca cct cca tcc tat gaa gag aca gtg gct gtt aac			159
Ser Ala Pro Ser Ala Pro Pro Ser Tyr Glu Glu Thr Val Ala Val Asn			
15	20	25	30
agt tat tac ccc aca cct cca gct ccc atg cct ggg cca act acg ggg			207
Ser Tyr Tyr Pro Thr Pro Pro Ala Pro Met Pro Gly Pro Thr Thr Gly			
	35	40	45
ctt gtg acg ggg cct gat ggg aag ggc atg aat cct cct tcg tat tat			255
Leu Val Thr Gly Pro Asp Gly Lys Gly Met Asn Pro Pro Ser Tyr Tyr			
	50	55	60
acc cag cca gcg ccc atc ccc aat aac aat cca att acc gtg cag acg			303
Thr Gln Pro Ala Pro Ile Pro Asn Asn Asn Pro Ile Thr Val Gln Thr			
	65	70	75
gtc tac gtg cag cac ccc atc acc ttt ttg gac cgc cct atc caa atg			351
Val Tyr Val Gln His Pro Ile Thr Phe Leu Asp Arg Pro Ile Gln Met			
	80	85	90
tgt tgt cct tcc tgc aac aag atg atc gtg agt cag ctg tcc tat aac			399
Cys Cys Pro Ser Cys Asn Lys Met Ile Val Ser Gln Leu Ser Tyr Asn			
	95	100	105
gcc ggt gct ctg acc tgg ctg tcc tgc ggg agc ctg tgc ctg ctg ggg			447
Ala Gly Ala Leu Thr Trp Leu Ser Cys Gly Ser Leu Cys Leu Leu Gly			
	115	120	125
tgc ata gcg ggc tgc tgc ttc atc ccc ttc tgc gtg gat gcc ctg cag			495
Cys Ile Ala Gly Cys Cys Phe Ile Pro Phe Cys Val Asp Ala Leu Gln			
	130	135	140
gac gtg gac cat tac tgt ccc aac tgc aga gct ctc ctg ggc acc tac			543
Asp Val Asp His Tyr Cys Pro Asn Cys Arg Ala Leu Leu Gly Thr Tyr			
	145	150	155
aag cgt ttg taggactcag ccagacgtgg agggagccgg gtgccgcagg			592
Lys Arg Leu			
160			
aagtcctttc cacctctcat ccagcttcac gcctggtgga gggtctgccc tgggtggtctc			652
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cccttgagtg tcagttccac gggttctctgc ctccctgaga ccctgagtcc tgccatctaa			832
ctgtgatcat tgccctatcc gaatatcttc ctgtgatctg ccatcagtgg ctcttttttc			892
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 Met Ser Val Pro Gly Pro Tyr Gln Ala Ala Thr Gly Pro Ser
 1 5 10
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 Ser Ala Pro Ser Ala Pro Pro Ser Tyr Glu Glu Thr Val Ala Val Asn
 15 20 25 30
 agt tat tac ccc aca cct cca gct ccc atg cct ggg cca act acg ggg 207
 Ser Tyr Tyr Pro Thr Pro Pro Ala Pro Met Pro Gly Pro Thr Thr Gly
 35 40 45
 ctt gtg acg ggg cct gat ggg aag ggc atg aat cct cct tcg tat tat 255
 Leu Val Thr Gly Pro Asp Gly Lys Gly Met Asn Pro Pro Ser Tyr Tyr
 50 55 60
 acc cag cca gcg ccc atc ccc aat aac aat cca att acc gtg cag acg 303
 Thr Gln Pro Ala Pro Ile Pro Asn Asn Asn Pro Ile Thr Val Gln Thr
 65 70 75
 gtc tac gtg cag cac ccc atc acc ttt ttg gac cgc cct gtc caa atg 351
 Val Tyr Val Gln His Pro Ile Thr Phe Leu Asp Arg Pro Val Gln Met
 80 85 90
 tgt tgt cct tcc tgc aac aag atg atc gtg agt cag ctg tcc tat aac 399
 Cys Cys Pro Ser Cys Asn Lys Met Ile Val Ser Gln Leu Ser Tyr Asn
 95 100 105 110
 gcc ggt gct ctg acc tgg ctg tcc tgc ggg agc ctg tgc ctg ctg ggg 447
 Ala Gly Ala Leu Thr Trp Leu Ser Cys Gly Ser Leu Cys Leu Leu Gly
 115 120 125
 tgc ata gcg ggc tgc tgc ttc atc ccc ttc tgc gtg gat gcc ctg cag 495
 Cys Ile Ala Gly Cys Cys Phe Ile Pro Phe Cys Val Asp Ala Leu Gln
 130 135 140
 gac gtg gac cat tac tgt ccc aac tgc aga gct ctc ctg ggc acc tac 543
 Asp Val Asp His Tyr Cys Pro Asn Cys Arg Ala Leu Leu Gly Thr Tyr
 145 150 155
 aag cgt ttg taggactcag ccagacgtgg agggagccgg gtgccgcagg 592
 Lys Arg Leu

160

aagtcctttc cacctctcat ccagcttcac gcctggtgga ggttctgccc tgggtggtctc 652
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<211> 249

<212> PRT

<213> Homo sapiens

<400> 107

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			20					25					30		
Val	Thr	Thr	Asn	Leu	Lys	Leu	Arg	Asn	Pro	Ser	Asp	Arg	Lys	Val	Cys
			35				40					45			
Phe	Lys	Val	Lys	Thr	Thr	Ala	Pro	Arg	Arg	Tyr	Cys	Val	Arg	Pro	Asn
	50					55					60				
Ser	Gly	Ile	Ile	Asp	Pro	Gly	Ser	Thr	Val	Thr	Val	Ser	Val	Met	Leu
65					70					75				80	

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aca aat ctt aaa ttg cga aat cca tcg gat aga aaa gtg tgt ttc aaa Thr Asn Leu Lys Leu Arg Asn Pro Ser Asp Arg Lys Val Cys Phe Lys 35 40 45 50			381
gtg aag act aca gca cct cgc cgg tac tgt gtg agg ccc aac agt gga Val Lys Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly 55 60 65			429
att att gac cca ggg tca act gtg act gtt tca gta atg cta cag ccc Ile Ile Asp Pro Gly Ser Thr Val Thr Val Ser Val Met Leu Gln Pro 70 75 80			477
ttt gac tat gat ccg aat gaa aag agt aaa cac aag ttt atg gta cag Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val Gln 85 90 95			525
aca att ttt gct cca cca aac act tca gat atg gaa gct gtg tgg aaa Thr Ile Phe Ala Pro Pro Asn Thr Ser Asp Met Glu Ala Val Trp Lys 100 105 110			573
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gaa atg ccc aat gaa aat gat aaa ttg aat gat atg gaa cct agc aaa Glu Met Pro Asn Glu Asn Asp Lys Leu Asn Asp Met Glu Pro Ser Lys 135 140 145			669
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cac agt gtt tca ctt aat gat acc gaa aca agg aaa cta atg gaa gag His Ser Val Ser Leu Asn Asp Thr Glu Thr Arg Lys Leu Met Glu Glu 165 170 175			765
tgt aaa aga ctt cag gga gaa atg atg aag cta tca gaa gaa aat cgg Cys Lys Arg Leu Gln Gly Glu Met Met Lys Leu Ser Glu Glu Asn Arg 180 185 190			813
cac ctg aga gat gaa ggt tta agg ctc aga aag gta gca cat tcg gat His Leu Arg Asp Glu Gly Leu Arg Leu Arg Lys Val Ala His Ser Asp 195 200 205 210			861
aaa cct gga tca acc tca act gca tcc ttc aga gat aat gtc acc agt Lys Pro Gly Ser Thr Ser Thr Ala Ser Phe Arg Asp Asn Val Thr Ser 215 220 225			909
cct ctt cct tca ctt ctt gtt gta att gca gcc att ttc att gga ttc Pro Leu Pro Ser Leu Leu Val Val Ile Ala Ala Ile Phe Ile Gly Phe 230 235 240			957

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Phe Leu Gly Lys Phe Ile Leu
245

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35 40 45
Pro Pro Leu Ser Arg Ser Leu Pro Met Asp His Pro Asp Ser Ser Gln
50 55 60
His Gly Pro Pro Phe Glu Gly Gln Ser Gln Val Gln Pro Pro Pro Ser
65 70 75 80
Gln Glu Ala Thr Pro Leu Gln Gln Glu Lys Leu Leu Pro Ala Gln Leu
85 90 95
Pro Ala Glu Lys Glu Val Gly Pro Pro Leu Pro Gln Glu Ala Val Pro
100 105 110
Leu Gln Lys Glu Leu Pro Ser Leu Gln His Pro Asn Glu Gln Lys Glu
115 120 125
Gly Thr Pro Ala Pro Phe Gly Asp Gln Ser His Pro Glu Pro Glu Ser

130	135	140
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Gly His Arg Leu Asp Gly Phe Pro Pro Gly Arg Pro Ser Pro Asp Asn 165 170 175		
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Trp Asn Leu Pro Gln Ser Ser Tyr Ser His Leu Thr Arg Gln Gly Glu 195 200 205		
Thr Leu Asn Phe Leu Glu Ile Gly Tyr Ser Arg Cys Cys His Cys Arg 210 215 220		
Ser His Thr Asn Arg Leu Glu Cys Ala Lys Leu Val Trp Glu Glu Ala 225 230 235 240		
Met Ser Arg Phe Cys Glu Ala Glu Phe Ser Val Lys Thr Arg Pro His 245 250 255		
Trp Cys Cys Thr Arg Gln Gly Glu Ala Arg Phe Ser Cys Phe Gln Glu 260 265 270		
Glu Ala Pro Gln Pro His Tyr Gln Leu Arg Ala Cys Pro Ser His Gln 275 280 285		
Pro Asp Ile Ser Ser Gly Leu Glu Leu Pro Phe Pro Pro Gly Val Pro 290 295 300		
Thr Leu Asp Asn Ile Lys Asn Ile Cys His Leu Arg Arg Phe Arg Ser 305 310 315 320		
Val Pro Arg Asn Leu Pro Ala Thr Asp Pro Leu Gln Arg Glu Leu Leu 325 330 335		
Ala Leu Ile Gln Leu Glu Arg Glu Phe Gln Arg Cys Cys Arg Gln Gly 340 345 350		
Asn Asn His Thr Cys Thr Trp Lys Ala Trp Glu Asp Thr Leu Asp Lys 355 360 365		
Tyr Cys Asp Arg Glu Tyr Ala Val Lys Thr His His His Leu Cys Cys 370 375 380		
Arg His Pro Pro Ser Pro Thr Arg Asp Glu Cys Phe Ala Arg Arg Ala 385 390 395 400		
Pro Tyr Pro Asn Tyr Asp Arg Asp Ile Leu Thr Ile Asp Ile Gly Arg 405 410 415		
Val Thr Pro Asn Leu Met Gly His Leu Cys Gly Asn Gln Arg Val Leu 420 425 430		
Thr Lys His Lys His Ile Pro Gly Leu Ile His Asn Met Thr Ala Arg		

435				440				445							
Cys	Cys	Asp	Leu	Pro	Phe	Pro	Glu	Gln	Ala	Cys	Cys	Ala	Glu	Glu	Glu
	450					455					460				
Lys	Leu	Thr	Phe	Ile	Asn	Asp	Leu	Cys	Gly	Pro	Arg	Arg	Asn	Ile	Trp
465					470					475					480
Arg	Asp	Pro	Ala	Leu	Cys	Cys	Tyr	Leu	Ser	Pro	Gly	Asp	Glu	Gln	Val
				485					490					495	
Asn	Cys	Phe	Asn	Ile	Asn	Tyr	Leu	Arg	Asn	Val	Ala	Leu	Val	Ser	Gly
			500					505					510		
Asp	Thr	Glu	Asn	Ala	Lys	Gly	Gln	Gly	Glu	Gln	Gly	Ser	Thr	Gly	Gly
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Thr	Asn	Ile	Ser	Ser	Thr	Ser	Glu	Pro	Lys	Glu	Glu				
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											Met	Gly	Thr	Thr	Ala		
											1					5	
aga	gca	gcc	ttg	gtc	ttg	acc	tat	ttg	gct	gtt	gct	tct	gct	gcc	tct	164	
Arg	Ala	Ala	Leu	Val	Leu	Thr	Tyr	Leu	Ala	Val	Ala	Ser	Ala	Ala	Ser		
						10							15				20
gag gga ggc ttc acg gct aca gga cag agg cag ctg agg cca gag cac																212	
Glu	Gly	Gly	Phe	Thr	Ala	Thr	Gly	Gln	Arg	Gln	Leu	Arg	Pro	Glu	His		
						25							30				35
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Phe	Gln	Glu	Val	Gly	Tyr	Ala	Ala	Pro	Pro	Ser	Pro	Pro	Leu	Ser	Arg		
				40							45						50
agc ctc ccc atg gat cac cct gac tcc tct cag cat ggc cct ccc ttt																308	
Ser	Leu	Pro	Met	Asp	His	Pro	Asp	Ser	Ser	Gln	His	Gly	Pro	Pro	Phe		
				55							60						65
gag gga cag agt caa gtg cag ccc cct ccc tct cag gag gcc acc cct																356	
Glu	Gly	Gln	Ser	Gln	Val	Gln	Pro	Pro	Pro	Ser	Gln	Glu	Ala	Thr	Pro		
		70							75					80			85

ctc	caa	cag	gaa	aag	ctg	cta	cct	gcc	caa	ctc	cct	gct	gaa	aag	gaa	404
Leu	Gln	Gln	Glu	Lys	Leu	Leu	Pro	Ala	Gln	Leu	Pro	Ala	Glu	Lys	Glu	
				90					95					100		
gtg	ggt	ccc	cct	ctc	cct	cag	gaa	gct	gtc	ccc	ctc	caa	aaa	gag	ctg	452
Val	Gly	Pro	Pro	Leu	Pro	Gln	Glu	Ala	Val	Pro	Leu	Gln	Lys	Glu	Leu	
			105					110					115			
ccc	tct	ctc	cag	cac	ccc	aat	gaa	cag	aag	gaa	gga	acg	cca	gct	cca	500
Pro	Ser	Leu	Gln	His	Pro	Asn	Glu	Gln	Lys	Glu	Gly	Thr	Pro	Ala	Pro	
		120					125					130				
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Phe	Gly	Asp	Gln	Ser	His	Pro	Glu	Pro	Glu	Ser	Trp	Asn	Ala	Ala	Gln	
	135					140					145					
cac	tgc	caa	cag	gac	cgg	tcc	caa	ggg	ggc	tgg	ggc	cac	cgg	ctg	gat	596
His	Cys	Gln	Gln	Asp	Arg	Ser	Gln	Gly	Gly	Trp	Gly	His	Arg	Leu	Asp	
150					155					160					165	
ggc	ttc	ccc	cct	ggg	cgg	cct	tct	cca	gac	aat	ctg	aac	caa	atc	tgc	644
Gly	Phe	Pro	Pro	Gly	Arg	Pro	Ser	Pro	Asp	Asn	Leu	Asn	Gln	Ile	Cys	
				170					175					180		
ctt	cct	aac	cgt	cag	cat	gtg	gta	tat	ggg	ccc	tgg	aac	cta	cca	cag	692
Leu	Pro	Asn	Arg	Gln	His	Val	Val	Tyr	Gly	Pro	Trp	Asn	Leu	Pro	Gln	
			185					190					195			
tcc	agc	tac	tcc	cac	ctc	act	cgc	cag	ggg	gag	acc	ctc	aat	ttc	ctg	740
Ser	Ser	Tyr	Ser	His	Leu	Thr	Arg	Gln	Gly	Glu	Thr	Leu	Asn	Phe	Leu	
		200					205					210				
gag	att	gga	tat	tcc	cgc	tgc	tgc	cac	tgc	cgc	agc	cac	aca	aac	cgc	788
Glu	Ile	Gly	Tyr	Ser	Arg	Cys	Cys	His	Cys	Arg	Ser	His	Thr	Asn	Arg	
	215					220					225					
cta	gag	tgt	gcc	aaa	ctt	gtg	tgg	gag	gaa	gca	atg	agc	cga	ttc	tgt	836
Leu	Glu	Cys	Ala	Lys	Leu	Val	Trp	Glu	Glu	Ala	Met	Ser	Arg	Phe	Cys	
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Glu	Ala	Glu	Phe	Ser	Val	Lys	Thr	Arg	Pro	His	Trp	Cys	Cys	Thr	Arg	
				250					255					260		
cag	ggg	gag	gct	cgg	ttc	tcc	tgc	ttc	cag	gag	gaa	gct	ccc	cag	cca	932
Gln	Gly	Glu	Ala	Arg	Phe	Ser	Cys	Phe	Gln	Glu	Glu	Ala	Pro	Gln	Pro	
			265					270					275			
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His	Tyr	Gln	Leu	Arg	Ala	Cys	Pro	Ser	His	Gln	Pro	Asp	Ile	Ser	Ser	
		280					285					290				
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Gly	Leu	Glu	Leu	Pro	Phe	Pro	Pro	Gly	Val	Pro	Thr	Leu	Asp	Asn	Ile	
	295					300					305					
aag	aac	atc	tgc	cac	ctg	agg	cgc	ttc	cgc	tct	gtg	cca	cgc	aac	ctg	1076

Lys	Asn	Ile	Cys	His	Leu	Arg	Arg	Phe	Arg	Ser	Val	Pro	Arg	Asn	Leu		
310					315					320					325		
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Pro	Ala	Thr	Asp	Pro	Leu	Gln	Arg	Glu	Leu	Leu	Ala	Leu	Ile	Gln	Leu		
				330					335					340			
gag	agg	gag	ttc	cag	cgc	tgc	tgc	cgc	cag	ggg	aac	aat	cac	acc	tgt	1172	
Glu	Arg	Glu	Phe	Gln	Arg	Cys	Cys	Arg	Gln	Gly	Asn	Asn	His	Thr	Cys		
			345					350					355				
aca	tgg	aag	gcc	tgg	gag	gat	acc	ctt	gac	aaa	tac	tgt	gac	cgg	gag	1220	
Thr	Trp	Lys	Ala	Trp	Glu	Asp	Thr	Leu	Asp	Lys	Tyr	Cys	Asp	Arg	Glu		
		360					365						370				
tat	gct	gtg	aag	acc	cac	cac	cac	ttg	tgt	tgc	cgc	cac	cct	ccc	agc	1268	
Tyr	Ala	Val	Lys	Thr	His	His	His	Leu	Cys	Cys	Arg	His	Pro	Pro	Ser		
		375					380					385					
cct	act	cgg	gat	gag	tgc	ttt	gcc	cgt	cgg	gct	cct	tac	ccc	aac	tat	1316	
Pro	Thr	Arg	Asp	Glu	Cys	Phe	Ala	Arg	Arg	Ala	Pro	Tyr	Pro	Asn	Tyr		
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gac	cgg	gac	atc	ttg	acc	att	gac	atc	ggg	cga	gtc	acc	ccc	aac	ctc	1364	
Asp	Arg	Asp	Ile	Leu	Thr	Ile	Asp	Ile	Gly	Arg	Val	Thr	Pro	Asn	Leu		
				410					415					420			
atg	ggc	cac	ctc	tgt	gga	aac	caa	aga	gtt	ctc	acc	aag	cat	aaa	cat	1412	
Met	Gly	His	Leu	Cys	Gly	Asn	Gln	Arg	Val	Leu	Thr	Lys	His	Lys	His		
			425					430					435				
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Ile	Pro	Gly	Leu	Ile	His	Asn	Met	Thr	Ala	Arg	Cys	Cys	Asp	Leu	Pro		
			440				445						450				
ttt	cca	gaa	cag	gcc	tgc	tgt	gca	gag	gag	gag	aaa	tta	acc	ttc	atc	1508	
Phe	Pro	Glu	Gln	Ala	Cys	Cys	Ala	Glu	Glu	Glu	Lys	Leu	Thr	Phe	Ile		
		455				460					465						
aat	gat	ctg	tgt	ggg	ccc	cga	cgt	aac	atc	tgg	cga	gac	cct	gcc	ctc	1556	
Asn	Asp	Leu	Cys	Gly	Pro	Arg	Arg	Asn	Ile	Trp	Arg	Asp	Pro	Ala	Leu		
					475					480					485		
tgc	tgt	tac	ctg	agt	cct	ggg	gat	gaa	cag	gtc	aac	tgc	ttc	aac	atc	1604	
Cys	Cys	Tyr	Leu	Ser	Pro	Gly	Asp	Glu	Gln	Val	Asn	Cys	Phe	Asn	Ile		
				490					495					500			
aat	tat	ctg	agg	aac	gtg	gct	cta	gtg	tct	gga	gac	act	gag	aac	gcc	1652	
Asn	Tyr	Leu	Arg	Asn	Val	Ala	Leu	Val	Ser	Gly	Asp	Thr	Glu	Asn	Ala		
				505				510					515				
aag	ggc	cag	ggg	gag	cag	ggc	tca	act	gga	gga	aca	aat	atc	agc	tcc	1700	
Lys	Gly	Gln	Gly	Glu	Gln	Gly	Ser	Thr	Gly	Gly	Thr	Asn	Ile	Ser	Ser		
			520				525						530				
acc	tct	gag	ccc	aag	gaa	gaa	tgagtcaccc	cagagcccta	gagggtcaga							1751	
Thr	Ser	Glu	Pro	Lys	Glu	Glu											

245										250					255				
Trp	Cys	Cys	Thr	Arg	Gln	Gly	Glu	Ala	Arg	Phe	Ser	Cys	Phe	Gln	Glu				
			260					265					270						
Glu	Ala	Pro	Gln	Pro	His	Tyr	Gln	Leu	Arg	Ala	Cys	Pro	Ser	His	Gln				
		275					280					285							
Pro	Asp	Ile	Ser	Ser	Gly	Leu	Glu	Leu	Pro	Phe	Pro	Pro	Gly	Val	Pro				
	290					295					300								
Thr	Leu	Asp	Asn	Ile	Lys	Asn	Ile	Cys	His	Leu	Arg	Arg	Phe	Arg	Ser				
305					310					315					320				
Val	Pro	Arg	Asn	Leu	Pro	Ala	Thr	Asp	Pro	Leu	Gln	Arg	Glu	Leu	Leu				
				325					330					335					
Ala	Leu	Ile	Gln	Leu	Glu	Arg	Glu	Phe	Gln	Arg	Cys	Cys	Arg	Gln	Gly				
			340					345					350						
Asn	Asn	His	Thr	Cys	Thr	Trp	Lys	Ala	Trp	Glu	Asp	Thr	Leu	Asp	Lys				
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	370					375					380								
Arg	His	Pro	Pro	Ser	Pro	Thr	Arg	Asp	Glu	Cys	Phe	Ala	Arg	Arg	Ala				
385					390					395					400				
Pro	Tyr	Pro	Asn	Tyr	Asp	Arg	Asp	Ile	Leu	Thr	Ile	Asp	Ile	Ser	Arg				
			405						410					415					
Val	Thr	Pro	Asn	Leu	Met	Gly	His	Leu	Cys	Gly	Asn	Gln	Arg	Val	Leu				
			420					425					430						
Thr	Lys	His	Lys	His	Ile	Pro	Gly	Leu	Ile	His	Asn	Met	Thr	Ala	Arg				
		435					440					445							
Cys	Cys	Asp	Leu	Pro	Phe	Pro	Glu	Gln	Ala	Cys	Cys	Ala	Glu	Glu	Glu				
	450					455					460								
Lys	Leu	Thr	Phe	Ile	Asn	Asp	Leu	Cys	Gly	Pro	Arg	Arg	Asn	Ile	Trp				
465					470					475					480				
Arg	Asp	Pro	Ala	Leu	Cys	Cys	Tyr	Leu	Ser	Pro	Gly	Asp	Glu	Gln	Val				
				485					490					495					
Asn	Cys	Phe	Asn	Ile	Asn	Tyr	Leu	Arg	Asn	Val	Ala	Leu	Val	Ser	Gly				
			500					505					510						
Asp	Thr	Glu	Asn	Ala	Lys	Gly	Gln	Gly	Glu	Gln	Gly	Ser	Thr	Gly	Gly				
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Thr	Asn	Ile	Ser	Ser	Thr	Ser	Glu	Pro	Lys	Glu	Glu								
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 Met Gly Thr Thr Ala
 1 5
 aga gca gcc ttg gtc ttg acc tat ttg gct gtt gct tct gct gcc tct 164
 Arg Ala Ala Leu Val Leu Thr Tyr Leu Ala Val Ala Ser Ala Ala Ser
 10 15 20
 gag gga ggc ttc acg gct aca gga cag agg cag ctg agg cca gag cac 212
 Glu Gly Gly Phe Thr Ala Thr Gly Gln Arg Gln Leu Arg Pro Glu His
 25 30 35
 ttt caa gaa gtt ggc tac gca gct ccc ccc tcc cca ccc cta tcc cga 260
 Phe Gln Glu Val Gly Tyr Ala Ala Pro Pro Ser Pro Pro Leu Ser Arg
 40 45 50
 agc ctc ccc atg gat cac cct gac tcc tct cag cat ggc cct ccc ttt 308
 Ser Leu Pro Met Asp His Pro Asp Ser Ser Gln His Gly Pro Pro Phe
 55 60 65
 gag gga cag agt caa gtg cag ccc cct ccc tct cag gag gcc acc cct 356
 Glu Gly Gln Ser Gln Val Gln Pro Pro Pro Ser Gln Glu Ala Thr Pro
 70 75 80 85
 ctc caa cag gaa aag ctg cta cct gcc caa ctc cct gct gaa aag gaa 404
 Leu Gln Gln Glu Lys Leu Leu Pro Ala Gln Leu Pro Ala Glu Lys Glu
 90 95 100
 gtg ggt ccc cct ctc cct cag gaa gct gtc ccc ctc caa aaa gag ctg 452
 Val Gly Pro Pro Leu Pro Gln Glu Ala Val Pro Leu Gln Lys Glu Leu
 105 110 115
 ccc tct ctc cag cac ccc aat gaa cag aag gaa gga acg cca gct cca 500
 Pro Ser Leu Gln His Pro Asn Glu Gln Lys Glu Gly Thr Pro Ala Pro
 120 125 130
 ttt ggg gac cag agc cat cca gaa cct gag tcc tgg aat gca gcc cag 548
 Phe Gly Asp Gln Ser His Pro Glu Pro Glu Ser Trp Asn Ala Ala Gln
 135 140 145
 cac tgc caa cag gac cgg tcc caa ggg ggc tgg ggc cac cgg ctg gat 596
 His Cys Gln Gln Asp Arg Ser Gln Gly Gly Trp Gly His Arg Leu Asp
 150 155 160 165
 ggc ttc ccc cct ggg cgg cct tct cca gac aat ctg aac caa atc tgc 644

Gly	Phe	Pro	Pro	Gly	Arg	Pro	Ser	Pro	Asp	Asn	Leu	Asn	Gln	Ile	Cys	
				170					175					180		
ctt	cct	aac	cgt	cag	cat	gtg	gta	tat	ggg	ccc	tgg	aac	cta	cca	cag	692
Leu	Pro	Asn	Arg	Gln	His	Val	Val	Tyr	Gly	Pro	Trp	Asn	Leu	Pro	Gln	
			185					190					195			
tcc	agc	tac	tcc	cac	ctc	act	cgc	cag	ggg	gag	acc	ctc	aat	ttc	ctg	740
Ser	Ser	Tyr	Ser	His	Leu	Thr	Arg	Gln	Gly	Glu	Thr	Leu	Asn	Phe	Leu	
		200					205					210				
gag	att	gga	tat	tcc	cgc	tgc	tgc	cac	tgc	cgc	agc	cac	aca	aac	cgc	788
Glu	Ile	Gly	Tyr	Ser	Arg	Cys	Cys	His	Cys	Arg	Ser	His	Thr	Asn	Arg	
	215					220					225					
cta	gag	tgt	gcc	aaa	ctt	gtg	tgg	gag	gaa	gca	atg	agc	cga	ttc	tgt	836
Leu	Glu	Cys	Ala	Lys	Leu	Val	Trp	Glu	Glu	Ala	Met	Ser	Arg	Phe	Cys	
230					235					240					245	
gag	gcc	gag	ttc	tcg	gtc	aag	acc	cga	ccc	cac	tgg	tgc	tgc	acg	cgg	884
Glu	Ala	Glu	Phe	Ser	Val	Lys	Thr	Arg	Pro	His	Trp	Cys	Cys	Thr	Arg	
				250					255					260		
cag	ggg	gag	gct	cgg	ttc	tcc	tgc	ttc	cag	gag	gaa	gct	ccc	cag	cca	932
Gln	Gly	Glu	Ala	Arg	Phe	Ser	Cys	Phe	Gln	Glu	Glu	Ala	Pro	Gln	Pro	
			265					270					275			
cac	tac	cag	ctc	cgg	gcc	tgc	ccc	agc	cat	cag	cct	gat	att	tcc	tcg	980
His	Tyr	Gln	Leu	Arg	Ala	Cys	Pro	Ser	His	Gln	Pro	Asp	Ile	Ser	Ser	
		280					285					290				
ggg	ctt	gag	ctg	cct	ttc	cct	cct	ggg	gtg	ccc	aca	ttg	gac	aat	atc	1028
Gly	Leu	Glu	Leu	Pro	Phe	Pro	Pro	Gly	Val	Pro	Thr	Leu	Asp	Asn	Ile	
	295					300					305					
aag	aac	atc	tgc	cac	ctg	agg	cgc	ttc	cgc	tct	gtg	cca	cgc	aac	ctg	1076
Lys	Asn	Ile	Cys	His	Leu	Arg	Arg	Phe	Arg	Ser	Val	Pro	Arg	Asn	Leu	
310					315					320					325	
cca	gct	act	gac	ccc	cta	caa	agg	gag	ctg	ctg	gca	ctg	atc	cag	ctg	1124
Pro	Ala	Thr	Asp	Pro	Leu	Gln	Arg	Glu	Leu	Leu	Ala	Leu	Ile	Gln	Leu	
				330					335					340		
gag	agg	gag	ttc	cag	cgc	tgc	tgc	cgc	cag	ggg	aac	aat	cac	acc	tgt	1172
Glu	Arg	Glu	Phe	Gln	Arg	Cys	Cys	Arg	Gln	Gly	Asn	Asn	His	Thr	Cys	
			345					350					355			
aca	tgg	aag	gcc	tgg	gag	gat	acc	ctt	gac	aaa	tac	tgt	gac	cgg	gag	1220
Thr	Trp	Lys	Ala	Trp	Glu	Asp	Thr	Leu	Asp	Lys	Tyr	Cys	Asp	Arg	Glu	
		360					365					370				
tat	gct	gtg	aag	acc	cac	cac	cac	ttg	tgt	tgc	cgc	cac	cct	ccc	agc	1268
Tyr	Ala	Val	Lys	Thr	His	His	His	Leu	Cys	Cys	Arg	His	Pro	Pro	Ser	
	375					380					385					
cct	act	cgg	gat	gag	tgc	ttt	gcc	cgt	cgg	gct	cct	tac	ccc	aac	tat	1316
Pro	Thr	Arg	Asp	Glu	Cys	Phe	Ala	Arg	Arg	Ala	Pro	Tyr	Pro	Asn	Tyr	

390	395	400	405	
gac cgg gac atc ttg acc att gac atc agt cga gtc acc ccc aac ctc				1364
Asp Arg Asp Ile Leu Thr Ile Asp Ile Ser Arg Val Thr Pro Asn Leu	410	415	420	
atg ggc cac ctc tgt gga aac caa aga gtt ctc acc aag cat aaa cat				1412
Met Gly His Leu Cys Gly Asn Gln Arg Val Leu Thr Lys His Lys His	425	430	435	
att cct ggg ctg atc cac aac atg act gcc cgc tgc tgt gac ctg cca				1460
Ile Pro Gly Leu Ile His Asn Met Thr Ala Arg Cys Cys Asp Leu Pro	440	445	450	
ttt cca gaa cag gcc tgc tgt gca gag gag gag aaa tta acc ttc atc				1508
Phe Pro Glu Gln Ala Cys Cys Ala Glu Glu Glu Lys Leu Thr Phe Ile	455	460	465	
aat gat ctg tgt ggt ccc cga cgt aac atc tgg cga gac cct gcc ctc				1556
Asn Asp Leu Cys Gly Pro Arg Arg Asn Ile Trp Arg Asp Pro Ala Leu	470	475	480	485
tgc tgt tac ctg agt cct ggg gat gaa cag gtc aac tgc ttc aac atc				1604
Cys Cys Tyr Leu Ser Pro Gly Asp Glu Gln Val Asn Cys Phe Asn Ile	490	495	500	
aat tat ctg agg aac gtg gct cta gtg tct gga gac act gag aac gcc				1652
Asn Tyr Leu Arg Asn Val Ala Leu Val Ser Gly Asp Thr Glu Asn Ala	505	510	515	
aag ggc cag ggg gag cag ggc tca act gga gga aca aat atc agc tcc				1700
Lys Gly Gln Gly Glu Gln Gly Ser Thr Gly Gly Thr Asn Ile Ser Ser	520	525	530	
acc tct gag ccc aag gaa gaa tgagtcaccc cagagcccta gagggtcaga				1751
Thr Ser Glu Pro Lys Glu Glu	535	540		
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 Arg Ile Leu Leu Leu Gly Thr Ala Val Glu Ser Ala Trp Gly Asp Glu
 35 40 45
 Gln Ser Ala Phe Arg Cys Asn Thr Gln Gln Pro Gly Cys Glu Asn Val

50	55	60
Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val Arg Phe Trp Val Leu		
65	70	75 80
Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu Tyr Leu Ala His Val		
	85	90 95
Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn Lys Lys Glu Glu Glu		
	100	105 110
Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val Asp Met His Leu Lys		
	115	120 125
Gln Ile Glu Ile Lys Lys Phe Lys Tyr Gly Ile Glu Glu His Gly Lys		
	130	135 140
Val Lys Met Arg Gly Gly Leu Leu Arg Thr Tyr Ile Ile Ser Ile Leu		
	145	150 155 160
Phe Lys Ser Ile Phe Glu Val Ala Phe Leu Leu Ile Gln Trp Tyr Ile		
	165	170 175
Tyr Gly Phe Ser Leu Ser Ala Val Tyr Thr Cys Lys Arg Asp Pro Cys		
	180	185 190
Pro His Gln Val Asp Cys Phe Leu Ser Arg Pro Thr Glu Lys Thr Ile		
	195	200 205
Phe Ile Ile Phe Met Leu Val Val Ser Leu Val Ser Leu Ala Leu Asn		
	210	215 220
Ile Ile Glu Leu Phe Tyr Val Phe Phe Lys Gly Val Lys Asp Arg Val		
	225	230 235 240
Lys Gly Lys Ser Asp Pro Tyr His Ala Thr Ser Gly Ala Leu Ser Pro		
	245	250 255
Ala Lys Asp Cys Gly Ser Gln Lys Tyr Ala Tyr Phe Asn Gly Cys Ser		
	260	265 270
Ser Pro Thr Ala Pro Leu Ser Pro Met Ser Pro Pro Gly Tyr Lys Leu		
	275	280 285
Val Thr Gly Asp Arg Asn Asn Ser Ser Cys Arg Asn Tyr Asn Lys Gln		
	290	295 300
Ala Ser Glu Gln Thr Trp Ala Asn Tyr Ser Ala Glu Gln Asn Arg Met		
	305	310 315 320
Gly Gln Ala Gly Ser Thr Ile Ser Asn Ser His Ala Gln Pro Phe Asp		
	325	330 335
Phe Pro Asp Asp Asn Gln Asn Ser Lys Lys Leu Ala Ala Gly His Glu		
	340	345 350
Leu Gln Pro Leu Ala Ile Val Asp Gln Arg Pro Ser Ser Arg Ala Ser		

gaa Glu 140	gag Glu	cat His	ggt Gly	aag Lys	gtg Val 145	aaa Lys	atg Met	cga Arg	ggg Gly 150	ttg Leu	ctg Leu	cga Arg	acc Thr	tac Tyr 155	665	
atc Ile	atc Ile	agt Ser	atc Ile	ctc Leu 160	ttc Phe	aag Lys	tct Ser	atc Ile	ttt Phe 165	gag Glu	gtg Val	gcc Ala	ttc Phe	ttg Leu 170	713	
atc Ile	cag Gln	tgg Trp	tac Tyr 175	atc Ile	tat Tyr	gga Gly	ttc Phe	agc Ser 180	ttg Leu	agt Ser	gct Ala	gtt Val	tac Tyr 185	act Thr	tgc Cys	761
aaa Lys	aga Arg	gat Asp 190	ccc Pro	tgc Cys	cca Pro	cat His	cag Gln 195	gtg Val	gac Asp	tgt Cys	ttc Phe	ctc Leu 200	tct Ser	cgc Arg	ccc Pro	809
acg Thr	gag Glu 205	aaa Lys	acc Thr	atc Ile	ttc Phe	atc Ile	atc Ile	ttc Phe	atg Met	ctg Leu	gtg Val	gtg Val	tcc Ser	ttg Leu	gtg Val	857
tcc Ser 220	ctg Leu	gcc Ala	ttg Leu	aat Asn	atc Ile 225	att Ile	gaa Glu	ctc Leu	ttc Phe	tat Tyr 230	gtt Val	ttc Phe	ttc Phe	aag Lys	ggc Gly 235	905
gtt Val	aag Lys	gat Asp	cgg Arg	gtt Val 240	aag Lys	gga Gly	aag Lys	agc Ser	gac Asp	cct Pro	tac Tyr	cat His	gcg Ala	acc Thr 250	agt Ser	953
ggt Gly	gcg Ala	ctg Leu	agc Ser 255	cct Pro	gcc Ala	aaa Lys	gac Asp	tgt Cys 260	ggg Gly	tct Ser	caa Gln	aaa Lys	tat Tyr 265	gct Ala	tat Tyr	1001
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cct Pro	ggg Gly 285	tac Tyr	aag Lys	ctg Leu	gtt Val	act Thr	ggc Gly	gac Asp	aga Arg	aac Asn	aat Asn	tct Ser	tct Ser	tgc Cys	cgc Arg	1097
aat Asn 300	tac Tyr	aac Asn	aag Lys	caa Gln	gca Ala 305	agt Ser	gag Glu	caa Gln	acc Thr	tgg Trp 310	gct Ala	aat Asn	tac Tyr	agt Ser	gca Ala 315	1145
gaa Glu	caa Gln	aat Asn	cga Arg	atg Met 320	ggg Gly	cag Gln	gcg Ala	gga Gly	agc Ser 325	acc Thr	atc Ile	tct Ser	aac Asn	tcc Ser 330	cat His	1193
gca Ala	cag Gln	cct Pro	ttt Phe	gat Asp	ttc Phe	ccc Pro	gat Asp	gat Asp	aac Asn	cag Gln	aat Asn	tct Ser	aaa Lys 345	aaa Lys	cta Leu	1241
gct Ala	gct Ala	gga Gly 350	cat His	gaa Glu	tta Leu	cag Gln	cca Pro	cta Leu	gcc Ala	att Ile	gtg Val	gac Asp	cag Gln	cga Arg	cct Pro	1289

tca agc aga gcc agc agt cgt gcc agc agc aga cct cgg cct gat gac 1337
 Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp
 365 370 375

ctg gag atc tagatacagg cttgaaagca tcaagattcc actcaattgt 1386
 Leu Glu Ile
 380

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 gagcgggtgg taattgtggc taaatatttt tgttttacca agaaactgaa ataattctgg 1746
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ctaatttgtt tgacattcca tgttaaacta cggatcatgtt cagcttcatt gcatgtaatg 3006
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Arg Ile Leu Leu Leu Gly Thr Ala Val Glu Ser Ala Trp Gly Asp Glu
35 40 45
Gln Ser Ala Phe Arg Cys Asn Thr Gln Gln Pro Gly Cys Glu Asn Val
50 55 60
Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val Arg Phe Trp Val Leu
65 70 75 80
Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu Tyr Leu Ala His Val
85 90 95
Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn Lys Lys Glu Glu Glu
100 105 110
Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val Asp Met His Leu Lys
115 120 125
Gln Ile Glu Ile Lys Lys Phe Lys Tyr Gly Ile Glu Glu His Gly Lys
130 135 140
Val Lys Met Arg Gly Gly Leu Leu Arg Thr Tyr Ile Ile Ser Ile Leu
145 150 155 160
Phe Lys Ser Ile Phe Glu Val Ala Phe Leu Leu Ile Gln Trp Tyr Ile
165 170 175
Tyr Gly Phe Ser Leu Ser Ala Val Tyr Thr Cys Lys Arg Asp Pro Cys
180 185 190
Pro His Gln Val Asp Cys Phe Leu Ser Arg Pro Thr Glu Lys Thr Ile
195 200 205
Phe Ile Ile Phe Met Leu Val Val Ser Leu Val Ser Leu Ala Leu Asn
210 215 220

Ile Ile Glu Leu Phe Tyr Val Phe Phe Lys Gly Val Lys Asp Arg Val
 225 230 235 240

Lys Gly Lys Ser Asp Pro Tyr His Ala Thr Ser Gly Ala Leu Ser Pro
 245 250 255

Ala Lys Asp Cys Gly Ser Gln Lys Tyr Ala Tyr Phe Asn Gly Cys Ser
 260 265 270

Ser Pro Thr Ala Pro Leu Ser Pro Met Ser Pro Pro Gly Tyr Lys Leu
 275 280 285

Val Thr Gly Asp Arg Asn Asn Ser Ser Cys Arg Asn Tyr Asn Lys Gln
 290 295 300

Ala Ser Glu Gln Asn Trp Ala Asn Tyr Ser Ala Glu Gln Asn Arg Met
 305 310 315 320

Gly Gln Ala Gly Ser Thr Ile Ser Asn Ser His Ala Gln Pro Phe Asp
 325 330 335

Phe Pro Asp Asp Asn Gln Asn Ser Lys Lys Leu Ala Ala Gly His Glu
 340 345 350

Leu Gln Pro Leu Ala Ile Val Asp Gln Arg Pro Ser Ser Arg Ala Ser
 355 360 365

Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp Leu Glu Ile
 370 375 380

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 aagagtgggtg cccaggcaac atg ggt gac tgg agc gcc tta ggc aaa ctc ctt 233
 Met Gly Asp Trp Ser Ala Leu Gly Lys Leu Leu
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 gac aag gtt caa gcc tac tca act gct gga ggg aag gtg tgg ctg tca 281
 Asp Lys Val Gln Ala Tyr Ser Thr Ala Gly Gly Lys Val Trp Leu Ser
 15 20 25
 gta ctt ttc att ttc cga atc ctg ctg ctg ggg aca gcg gtt gag tca 329

Val Leu Phe Ile Phe Arg Ile Leu Leu Leu Gly Thr Ala Val Glu Ser
30 35 40

gcc tgg gga gat gag cag tct gcc ttt cgt tgt aac act cag caa cct 377
Ala Trp Gly Asp Glu Gln Ser Ala Phe Arg Cys Asn Thr Gln Gln Pro
45 50 55

ggt tgt gaa aat gtc tgc tat gac aag tct ttc cca atc tct cat gtg 425
Gly Cys Glu Asn Val Cys Tyr Asp Lys Ser Phe Pro Ile Ser His Val
60 65 70 75

cgc ttc tgg gtc ctg cag atc ata ttt gtg tct gta ccc aca ctc ttg 473
Arg Phe Trp Val Leu Gln Ile Ile Phe Val Ser Val Pro Thr Leu Leu
80 85 90

tac ctg gct cat gtg ttc tat gtg atg cga aag gaa gag aaa ctg aac 521
Tyr Leu Ala His Val Phe Tyr Val Met Arg Lys Glu Glu Lys Leu Asn
95 100 105

aag aaa gag gaa gaa ctc aag gtt gcc caa act gat ggt gtc aat gtg 569
Lys Lys Glu Glu Glu Leu Lys Val Ala Gln Thr Asp Gly Val Asn Val
110 115 120

gac atg cac ttg aag cag att gag ata aag aag ttc aag tac ggt att 617
Asp Met His Leu Lys Gln Ile Glu Ile Lys Lys Phe Lys Tyr Gly Ile
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gaa gag cat ggt aag gtg aaa atg cga ggg ggg ttg ctg cga acc tac 665
Glu Glu His Gly Lys Val Lys Met Arg Gly Gly Leu Leu Arg Thr Tyr
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atc atc agt atc ctc ttc aag tct atc ttt gag gtg gcc ttc ttg ctg 713
Ile Ile Ser Ile Leu Phe Lys Ser Ile Phe Glu Val Ala Phe Leu Leu
160 165 170

atc cag tgg tac atc tat gga ttc agc ttg agt gct gtt tac act tgc 761
Ile Gln Trp Tyr Ile Tyr Gly Phe Ser Leu Ser Ala Val Tyr Thr Cys
175 180 185

aaa aga gat ccc tgc cca cat cag gtg gac tgt ttc ctc tct cgc ccc 809
Lys Arg Asp Pro Cys Pro His Gln Val Asp Cys Phe Leu Ser Arg Pro
190 195 200

acg gag aaa acc atc ttc atc atc ttc atg ctg gtg gtg tcc ttg gtg 857
Thr Glu Lys Thr Ile Phe Ile Ile Phe Met Leu Val Val Ser Leu Val
205 210 215

tcc ctg gcc ttg aat atc att gaa ctc ttc tat gtt ttc ttc aag ggc 905
Ser Leu Ala Leu Asn Ile Ile Glu Leu Phe Tyr Val Phe Phe Lys Gly
220 225 230 235

gtt aag gat cgg gtt aag gga aag agc gac cct tac cat gcg acc agt 953
Val Lys Asp Arg Val Lys Gly Lys Ser Asp Pro Tyr His Ala Thr Ser
240 245 250

ggt gcg ctg agc cct gcc aaa gac tgt ggg tct caa aaa tat gct tat 1001
Gly Ala Leu Ser Pro Ala Lys Asp Cys Gly Ser Gln Lys Tyr Ala Tyr

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ttc aat ggc tgc tcc tca cca acc gct ccc ctc tcg cct atg tct cct			1049
Phe Asn Gly Cys Ser Ser Pro Thr Ala Pro Leu Ser Pro Met Ser Pro			
270	275	280	
cct ggg tac aag ctg gtt act ggc gac aga aac aat tct tct tgc cgc			1097
Pro Gly Tyr Lys Leu Val Thr Gly Asp Arg Asn Asn Ser Ser Cys Arg			
285	290	295	
aat tac aac aag caa gca agt gag caa aac tgg gct aat tac agt gca			1145
Asn Tyr Asn Lys Gln Ala Ser Glu Gln Asn Trp Ala Asn Tyr Ser Ala			
300	305	310	315
gaa caa aat cga atg ggg cag gcg gga agc acc atc tct aac tcc cat			1193
Glu Gln Asn Arg Met Gly Gln Ala Gly Ser Thr Ile Ser Asn Ser His			
	320	325	330
gca cag cct ttt gat ttc ccc gat gat aac cag aat tct aaa aaa cta			1241
Ala Gln Pro Phe Asp Phe Pro Asp Asp Asn Gln Asn Ser Lys Lys Leu			
	335	340	345
gct gct gga cat gaa tta cag cca cta gcc att gtg gac cag cga cct			1289
Ala Ala Gly His Glu Leu Gln Pro Leu Ala Ile Val Asp Gln Arg Pro			
	350	355	360
tca agc aga gcc agc agt cgt gcc agc agc aga cct cgg cct gat gac			1337
Ser Ser Arg Ala Ser Ser Arg Ala Ser Ser Arg Pro Arg Pro Asp Asp			
	365	370	375
ctg gag atc tagatacagg cttgaaagca tcaagattcc actcaattgt			1386
Leu Glu Ile			
380			
ggagaagaaa aaaggtgctg tagaaagtgc accaggtgtt aattttgatc cgggtggaggt			1446
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atattctttt tccatccact tgcacaatat cattaccatc actttttcat cattcctcag			2046
ctactactca cattcattta atggtttctg taaacatttt taagacagtt gggatgtcac			2106

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<210> 117
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<212> PRT
<213> Homo sapiens
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      20                      25                      30

Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr Gly Asp Pro Gln
      35                      40                      45

Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met Asp Pro Glu Ser
  50                      55                      60

Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys Glu Lys Val Ser
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Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln Glu Leu
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<210> 118
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (76)..(1269)

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 Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu
 1 5 10
 tgc atc tgg atg agt gca ctt ttc ctt ggt gtg gga gtg agg gca gag 159
 Cys Ile Trp Met Ser Ala Leu Phe Leu Gly Val Gly Val Arg Ala Glu
 15 20 25
 gaa gct gga gcg agg gtg caa caa aac gtt cca agt ggg aca gat act 207
 Glu Ala Gly Ala Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr
 30 35 40
 gga gat cct caa agt aag ccc ctc ggt gac tgg gct gct ggc acc atg 255
 Gly Asp Pro Gln Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met
 45 50 55 60
 gac cca gag agc agt atc ttt att gag gat gcc att aag tat ttc aag 303
 Asp Pro Glu Ser Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys
 65 70 75
 gaa aaa gtg agc aca cag aat ctg cta ctc ctg ctg act gat aat gag 351
 Glu Lys Val Ser Thr Gln Asn Leu Leu Leu Leu Thr Asp Asn Glu
 80 85 90
 gcc tgg aac gga ttc gtg gct gct gct gaa ctg ccc agg aat gag gca 399
 Ala Trp Asn Gly Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala
 95 100 105
 gat gag ctc cgt aaa gct ctg gac aac ctt gca aga caa atg atc atg 447
 Asp Glu Leu Arg Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met
 110 115 120
 aaa gac aaa aac tgg cac gat aaa ggc cag cag tac aga aac tgg ttt 495
 Lys Asp Lys Asn Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe
 125 130 135 140
 ctg aaa gag ttt cct cgg ttg aaa agt aag ctt gag gat aac ata aga 543
 Leu Lys Glu Phe Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg
 145 150 155
 agg ctc cgt gcc ctt gca gat ggg gtt cag aag gtc cac aaa ggc acc 591

Arg	Leu	Arg	Ala	Leu	Ala	Asp	Gly	Val	Gln	Lys	Val	His	Lys	Gly	Thr		
			160					165					170				
acc	atc	gcc	aat	gtg	gtg	tct	ggc	tct	ctc	agc	att	tcc	tct	ggc	atc	639	
Thr	Ile	Ala	Asn	Val	Val	Ser	Gly	Ser	Leu	Ser	Ile	Ser	Ser	Gly	Ile		
		175					180				185						
ctg	acc	ctc	gtc	ggc	atg	ggg	ctg	gca	ccc	ttc	aca	gag	gga	ggc	agc	687	
Leu	Thr	Leu	Val	Gly	Met	Gly	Leu	Ala	Pro	Phe	Thr	Glu	Gly	Gly	Ser		
	190					195					200						
ctt	gta	ctc	ttg	gaa	cct	ggg	atg	gag	ttg	gga	atc	aca	gca	gct	ttg	735	
Leu	Val	Leu	Leu	Glu	Pro	Gly	Met	Glu	Leu	Gly	Ile	Thr	Ala	Ala	Leu		
205					210					215					220		
acc	ggg	att	acc	agc	agt	acc	ata	gac	tac	gga	aag	aag	tgg	tgg	aca	783	
Thr	Gly	Ile	Thr	Ser	Ser	Thr	Ile	Asp	Tyr	Gly	Lys	Lys	Trp	Trp	Thr		
			225					230						235			
caa	gcc	caa	gcc	cac	gac	ctg	gtc	atc	aaa	agc	ctt	gac	aaa	ttg	aag	831	
Gln	Ala	Gln	Ala	His	Asp	Leu	Val	Ile	Lys	Ser	Leu	Asp	Lys	Leu	Lys		
			240					245					250				
gag	gtg	aag	gag	ttt	ttg	ggg	gag	aac	ata	tcc	aac	ttt	ctt	tcc	tta	879	
Glu	Val	Lys	Glu	Phe	Leu	Gly	Glu	Asn	Ile	Ser	Asn	Phe	Leu	Ser	Leu		
	255					260						265					
gct	ggc	aat	act	tac	caa	ctc	aca	cga	ggc	att	ggg	aag	gac	atc	cgt	927	
Ala	Gly	Asn	Thr	Tyr	Gln	Leu	Thr	Arg	Gly	Ile	Gly	Lys	Asp	Ile	Arg		
	270				275						280						
gcc	ctc	aga	cga	gcc	aga	gcc	aat	ctt	cag	tca	gta	ccg	cat	gcc	tca	975	
Ala	Leu	Arg	Arg	Ala	Arg	Ala	Asn	Leu	Gln	Ser	Val	Pro	His	Ala	Ser		
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gcc	tca	cgc	ccc	cgg	gtc	act	gag	cca	atc	tca	gct	gaa	agc	ggg	gaa	1023	
Ala	Ser	Arg	Pro	Arg	Val	Thr	Glu	Pro	Ile	Ser	Ala	Glu	Ser	Gly	Glu		
			305						310					315			
cag	gtg	gag	aga	gtt	aat	gaa	ccc	agc	atc	ctg	gaa	atg	agc	aga	gga	1071	
Gln	Val	Glu	Arg	Val	Asn	Glu	Pro	Ser	Ile	Leu	Glu	Met	Ser	Arg	Gly		
			320					325					330				
gtc	aag	ctc	acg	gat	gtg	gcc	cct	gta	agc	ttc	ttt	ctt	gtg	ctg	gat	1119	
Val	Lys	Leu	Thr	Asp	Val	Ala	Pro	Val	Ser	Phe	Phe	Leu	Val	Leu	Asp		
		335				340						345					
gta	gtc	tac	ctc	gtg	tac	gaa	tca	aag	cac	tta	cat	gag	ggg	gca	aag	1167	
Val	Val	Tyr	Leu	Val	Tyr	Glu	Ser	Lys	His	Leu	His	Glu	Gly	Ala	Lys		
	350					355					360						
tca	gag	aca	gct	gag	gag	ctg	aag	aag	gtg	gct	cag	gag	ctg	gag	gag	1215	
Ser	Glu	Thr	Ala	Glu	Glu	Leu	Lys	Lys	Val	Ala	Gln	Glu	Leu	Glu	Glu		
365					370					375					380		
aag	cta	aac	att	ctc	aac	aat	aat	tat	aag	att	ctg	cag	gcg	gac	caa	1263	
Lys	Leu	Asn	Ile	Leu	Asn	Asn	Asn	Tyr	Lys	Ile	Leu	Gln	Ala	Asp	Gln		

385

390

395

gaa ctg tgaccacagg gcagggcagc caccaggaga gatatgcctg gcagggggcca 1319
 Glu Leu

ggacaaaatg caaacttttt ttttttctga gacagagtct tgctctgtcg ccaagttgca 1379

gtgagccgag atatcgccac tgcaactccag cctgggtgac agagcgagac tccatctcaa 1439

aaaaaaaaa aaaaagaata tattgacgga agaatagaga ggaggcttga aggaaccagc 1499

aatgagaagg ccaggaaaag aaagagctga aaatggagaa agcccaagag ttagaacagt 1559

tggatacagg agaagaaaca gcggctccac tacagâccca gccccagggt caatgtcctc 1619

cgaagaatga agtctttccc tggatgatgt cccctgccct gtctttccag catccactct 1679

cccttgctct cctgggggca tatctcagtc aggcagcggc ttcctgatga tggtcgttgg 1739

ggtggttgct atgtgatggg tcccctccag gttactaaag ggtgcatgtc cctgcttga 1799

acactgaagg gcaggtggtg agccatggcc atggtcccca gctgaggagc aggtgtcctt 1859

gagaacccaa acttcccaga gagtatgtga gaaccaacca atgaaaacag tcccatcgct 1919

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actcacctac tcatac 2054

<210> 119
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 <212> PRT
 <213> Homo sapiens

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Ser Ala Leu Phe Leu Gly Val Arg Val Arg Ala Glu Glu Ala Gly Ala
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Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr Gly Asp Pro Gln
 35 40 45

Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met Asp Pro Glu Ser
 50 55 60

Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys Glu Lys Val Ser
 65 70 75 80

Thr Gln Asn Leu Leu Leu Leu Thr Asp Asn Glu Ala Trp Asn Gly
 85 90 95

Phe Val Ala Ala Ala Glu Leu Pro Arg Asn Glu Ala Asp Glu Leu Arg

100	105	110
Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met Lys Asp Lys Asn		
115	120	125
Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe Leu Lys Glu Phe		
130	135	140
Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg Arg Leu Arg Ala		
145	150	155
Leu Ala Asp Gly Val Gln Lys Val His Lys Gly Thr Thr Ile Ala Asn		
165	170	175
Val Val Ser Gly Ser Leu Ser Ile Ser Ser Gly Ile Leu Thr Leu Val		
180	185	190
Gly Met Gly Leu Ala Pro Phe Thr Glu Gly Gly Ser Leu Val Leu Leu		
195	200	205
Glu Pro Gly Met Glu Leu Gly Ile Thr Ala Ala Leu Thr Gly Ile Thr		
210	215	220
Ser Ser Thr Ile Asp Tyr Gly Lys Lys Trp Trp Thr Gln Ala Gln Ala		
225	230	235
His Asp Leu Val Ile Lys Ser Leu Asp Lys Leu Lys Glu Val Lys Glu		
245	250	255
Phe Leu Gly Glu Asn Ile Ser Asn Phe Leu Ser Leu Ala Gly Asn Thr		
260	265	270
Tyr Gln Leu Thr Arg Gly Ile Gly Lys Asp Ile Arg Ala Leu Arg Arg		
275	280	285
Ala Arg Ala Asn Leu Gln Ser Val Pro His Ala Ser Ala Ser Arg Pro		
290	295	300
Arg Val Thr Glu Pro Ile Ser Ala Glu Ser Gly Glu Gln Val Glu Arg		
305	310	315
Val Asn Glu Pro Ser Ile Leu Glu Met Ser Arg Gly Val Lys Leu Thr		
325	330	335
Asp Val Ala Pro Val Ser Phe Phe Leu Val Leu Asp Val Val Tyr Leu		
340	345	350
Val Tyr Glu Ser Lys His Leu His Glu Gly Ala Lys Ser Glu Thr Ala		
355	360	365
Glu Glu Leu Lys Lys Val Ala Gln Glu Leu Glu Glu Lys Leu Asn Ile		
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Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln Glu Leu		
385	390	395

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 Met Glu Gly Ala Ala Leu Leu Arg Val Ser Val Leu
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 tgc atc tgg atg agt gca ctt ttc ctt ggt gtg aga gtg agg gca gag 159
 Cys Ile Trp Met Ser Ala Leu Phe Leu Gly Val Arg Val Arg Ala Glu
 15 20 25
 gaa gct gga gcg agg gtg caa caa aac gtt cca agt ggg aca gat act 207
 Glu Ala Gly Ala Arg Val Gln Gln Asn Val Pro Ser Gly Thr Asp Thr
 30 35 40
 gga gat cct caa agt aag ccc ctc ggt gac tgg gct gct ggc acc atg 255
 Gly Asp Pro Gln Ser Lys Pro Leu Gly Asp Trp Ala Ala Gly Thr Met
 45 50 55 60
 gac cca gag agc agt atc ttt att gag gat gcc att aag tat ttc aag 303
 Asp Pro Glu Ser Ser Ile Phe Ile Glu Asp Ala Ile Lys Tyr Phe Lys
 65 70 75
 gaa aaa gtg agc aca cag aat ctg cta ctc ctg ctg act gat aat gag 351
 Glu Lys Val Ser Thr Gln Asn Leu Leu Leu Leu Leu Thr Asp Asn Glu
 80 85 90
 gcc tgg aac gga ttc gtg gct gct gct gaa ctg ccc agg aat gag gca 399
 Ala Trp Asn Gly Phe Val Ala Ala Glu Leu Pro Arg Asn Glu Ala
 95 100 105
 gat gag ctc cgt aaa gct ctg gac aac ctt gca aga caa atg atc atg 447
 Asp Glu Leu Arg Lys Ala Leu Asp Asn Leu Ala Arg Gln Met Ile Met
 110 115 120
 aaa gac aaa aac tgg cac gat aaa ggc cag cag tac aga aac tgg ttt 495
 Lys Asp Lys Asn Trp His Asp Lys Gly Gln Gln Tyr Arg Asn Trp Phe
 125 130 135 140
 ctg aaa gag ttt cct cgg ttg aaa agt aag ctt gag gat aac ata aga 543
 Leu Lys Glu Phe Pro Arg Leu Lys Ser Lys Leu Glu Asp Asn Ile Arg
 145 150 155
 agg ctc cgt gcc ctt gca gat ggg gtt cag aag gtc cac aaa ggc acc 591
 Arg Leu Arg Ala Leu Ala Asp Gly Val Gln Lys Val His Lys Gly Thr
 160 165 170
 acc atc gcc aat gtg gtg tct ggc tct ctc agc att tcc tct ggc atc 639

Thr Ile Ala Asn Val Val Ser Gly Ser Leu Ser Ile Ser Ser Gly Ile
 175 180 185

ctg acc ctc gtc ggc atg ggt ctg gca ccc ttc aca gag gga ggc agc 687
 Leu Thr Leu Val Gly Met Gly Leu Ala Pro Phe Thr Glu Gly Gly Ser
 190 195 200

ctt gta ctc ttg gaa cct ggg atg gag ttg gga atc aca gca gct ttg 735
 Leu Val Leu Leu Glu Pro Gly Met Glu Leu Gly Ile Thr Ala Ala Leu
 205 210 215 220

acc ggg att acc agc agt acc ata gac tac gga aag aag tgg tgg aca 783
 Thr Gly Ile Thr Ser Ser Thr Ile Asp Tyr Gly Lys Lys Trp Trp Thr
 225 230 235

caa gcc caa gcc cac gac ctg gtc atc aaa agc ctt gac aaa ttg aag 831
 Gln Ala Gln Ala His Asp Leu Val Ile Lys Ser Leu Asp Lys Leu Lys
 240 245 250

gag gtg aag gag ttt ttg ggt gag aac ata tcc aac ttt ctt tcc tta 879
 Glu Val Lys Glu Phe Leu Gly Glu Asn Ile Ser Asn Phe Leu Ser Leu
 255 260 265

gct ggc aat act tac caa ctc aca cga ggc att ggg aag gac atc cgt 927
 Ala Gly Asn Thr Tyr Gln Leu Thr Arg Gly Ile Gly Lys Asp Ile Arg
 270 275 280

gcc ctc aga cga gcc aga gcc aat ctt cag tca gta ccg cat gcc tca 975
 Ala Leu Arg Arg Ala Arg Ala Asn Leu Gln Ser Val Pro His Ala Ser
 285 290 295 300

gcc tca cgc ccc cgg gtc act gag cca atc tca gct gaa agc ggt gaa 1023
 Ala Ser Arg Pro Arg Val Thr Glu Pro Ile Ser Ala Glu Ser Gly Glu
 305 310 315

cag gtg gag aga gtt aat gaa ccc agc atc ctg gaa atg agc aga gga 1071
 Gln Val Glu Arg Val Asn Glu Pro Ser Ile Leu Glu Met Ser Arg Gly
 320 325 330

gtc aag ctc acg gat gtg gcc cct gta agc ttc ttt ctt gtg ctg gat 1119
 Val Lys Leu Thr Asp Val Ala Pro Val Ser Phe Phe Leu Val Leu Asp
 335 340 345

gta gtc tac ctc gtg tac gaa tca aag cac tta cat gag ggg gca aag 1167
 Val Val Tyr Leu Val Tyr Glu Ser Lys His Leu His Glu Gly Ala Lys
 350 355 360

tca gag aca gct gag gag ctg aag aag gtg gct cag gag ctg gag gag 1215
 Ser Glu Thr Ala Glu Glu Leu Lys Lys Val Ala Gln Glu Leu Glu Glu
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aag cta aac att ctc aac aat aat tat aag att ctg cag gcg gac caa 1263
 Lys Leu Asn Ile Leu Asn Asn Asn Tyr Lys Ile Leu Gln Ala Asp Gln
 385 390 395

gaa ctg tgaccacagg gcagggcagc caccaggaga gatatgcctg gcaggggccca 1319
 Glu Leu

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 35 40 45
 Phe Met Leu Gly Lys Gln Glu Val Ile Arg Gly Trp Glu Glu Gly Val
 50 55 60
 Ala Gln Met Ser Val Gly Gln Arg Ala Lys Leu Thr Ile Ser Pro Asp
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 Tyr Ala Tyr Gly Ala Thr Gly His Pro Gly Ile Ile Pro Pro His Ala
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 Thr Leu Val Phe Asp Val Glu Leu Leu Lys Leu Glu
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<210> 122

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 Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu Lys Gln Ala Cys Ile
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 65 70 75 80
 Val Ser Glu Thr Ile Arg Lys Gly Leu Ile Asp Val Glu Met Tyr Asn
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 Ser Thr Gln Gly Leu Leu Met Ala Gly Ser Val Ser Ala Met Phe Gly
 100 105 110
 Ser Ala Val Trp Gln Leu Val Ala Ser Phe Leu Lys Leu Pro Ile Ser
 115 120 125
 Gly Thr His Cys Ile Val Gly Ala Thr Ile Gly Phe Ser Leu Val Ala
 130 135 140

Lys Gly Gln Glu Gly Val Lys Trp Ser Glu Leu Ile Lys Ile Val Met
145 150 155 160
Ser Trp Phe Val Ser Pro Leu Leu Ser Gly Ile Met Ser Gly Ile Leu
165 170 175
Phe Phe Leu Val Arg Ala Phe Ile Leu His Lys Ala Asp Pro Val Pro
180 185 190
Asn Gly Leu Arg Ala Leu Pro Val Phe Tyr Ala Cys Thr Val Gly Ile
195 200 205
Asn Leu Phe Ser Ile Met Tyr Thr Gly Ala Pro Leu Leu Gly Phe Asp
210 215 220
Lys Leu Pro Leu Trp Gly Thr Ile Leu Ile Ser Val Gly Cys Ala Val
225 230 235 240
Phe Cys Ala Leu Ile Val Trp Phe Phe Val Cys Pro Arg Met Lys Arg
245 250 255
Lys Ile Glu Arg Glu Ile Lys Cys Ser Pro Ser Glu Ser Pro Leu Met
260 265 270
Glu Lys Lys Asn Ser Leu Lys Glu Asp His Glu Glu Thr Lys Leu Ser
275 280 285
Val Gly Asp Ile Glu Asn Lys His Pro Val Ser Glu Val Gly Pro Ala
290 295 300
Thr Val Pro Leu Gln Ala Val Val Glu Glu Arg Thr Val Ser Phe Lys
305 310 315 320
Leu Gly Asp Leu Glu Glu Ala Pro Glu Arg Glu Arg Leu Pro Ser Val
325 330 335
Asp Leu Lys Glu Glu Thr Ser Ile Asp Ser Thr Val Asn Gly Ala Val
340 345 350
Gln Leu Pro Asn Gly Asn Leu Val Gln Phe Ser Gln Ala Val Ser Asn
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Gln Ile Asn Ser Ser Gly His Tyr Gln Tyr His Thr Val His Lys Asp
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Gly Asp Cys Met Gly Asp Ser Gly Asp Lys Pro Leu Arg Arg Asn Asn
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Ser Tyr Thr Ser Tyr Thr Met Ala Ile Cys Gly Met Pro Leu Asp Ser
420 425 430
Phe Arg Ala Lys Glu Gly Glu Gln Lys Gly Glu Glu Met Glu Lys Leu
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 Ala His Gly Gly Asn Asp Val Ser Asn Ala Ile Gly Pro Leu Val Ala
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 Pro Ile Trp Leu Leu Leu Tyr Gly Gly Val Gly Ile Cys Val Gly Leu
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 Trp Val Trp Gly Arg Arg Val Ile Gln Thr Met Gly Lys Asp Leu Thr
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 Cys Lys Val Gly Ser Val Val Ser Val Gly Trp Leu Arg Ser Lys Lys
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acc gcc gct tct ggt cct ttg gtg gac tac cta tgg atg ctc atc ctg 161
Thr Ala Ala Ser Gly Pro Leu Val Asp Tyr Leu Trp Met Leu Ile Leu
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Val Ala Asn Ser Phe Gly Thr Ala Val Gly Ser Gly Val Val Thr Leu
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aag caa gcc tgc atc cta gct agc atc ttt gaa aca gtg ggc tct gtc 305
Lys Gln Ala Cys Ile Leu Ala Ser Ile Phe Glu Thr Val Gly Ser Val
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Leu Leu Gly Ala Lys Val Ser Glu Thr Ile Arg Lys Gly Leu Ile Asp
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Val Glu Met Tyr Asn Ser Thr Gln Gly Leu Leu Met Ala Gly Ser Val
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Ser Ala Met Phe Gly Ser Ala Val Trp Gln Leu Val Ala Ser Phe Leu
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Lys Leu Pro Ile Ser Gly Thr His Cys Ile Val Gly Ala Thr Ile Gly
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Phe Ser Leu Val Ala Lys Gly Gln Glu Gly Val Lys Trp Ser Glu Leu
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ata aaa att gtg atg tct tgg ttc gtg tcc cca ctg ctt tct gga att 593
Ile Lys Ile Val Met Ser Trp Phe Val Ser Pro Leu Leu Ser Gly Ile
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atg tct gga att tta ttc ttc ctg gtt cgt gca ttc atc ctc cat aag 641
Met Ser Gly Ile Leu Phe Phe Leu Val Arg Ala Phe Ile Leu His Lys
      175              180              185

gca gat cca gtt cct aat ggt ttg cga gct ttg cca gtt ttc tat gcc 689
Ala Asp Pro Val Pro Asn Gly Leu Arg Ala Leu Pro Val Phe Tyr Ala
      190              195              200

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Cys Thr Val Gly Ile Asn Leu Phe Ser Ile Met Tyr Thr Gly Ala Pro
      205              210              215

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Val	Gly	Cys	Ala	Val	Phe	Cys	Ala	Leu	Ile	Val	Trp	Phe	Phe	Val	Cys	
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Pro	Arg	Met	Lys	Arg	Lys	Ile	Glu	Arg	Glu	Ile	Lys	Cys	Ser	Pro	Ser	
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Glu	Thr	Lys	Leu	Ser	Val	Gly	Asp	Ile	Glu	Asn	Lys	His	Pro	Val	Ser	
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Glu	Val	Gly	Pro	Ala	Thr	Val	Pro	Leu	Gln	Ala	Val	Val	Glu	Glu	Arg	
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Thr	Val	Ser	Phe	Lys	Leu	Gly	Asp	Leu	Glu	Glu	Ala	Pro	Glu	Arg	Glu	
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agg	ctt	ccc	agc	gtg	gac	ttg	aaa	gag	gaa	acc	agc	ata	gat	agc	acc	1121
Arg	Leu	Pro	Ser	Val	Asp	Leu	Lys	Glu	Glu	Thr	Ser	Ile	Asp	Ser	Thr	
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Gln	Ala	Val	Ser	Asn	Gln	Ile	Asn	Ser	Ser	Gly	His	Tyr	Gln	Tyr	His	
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His	Leu	Ala	Lys	Val	Gly	Asp	Cys	Met	Gly	Asp	Ser	Gly	Asp	Lys	Pro	
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Lys Pro Glu Val Ser Leu Leu Phe Gln Phe Leu Gln Ile Leu Thr Ala	
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Cys Phe Gly Ser Phe Ala His Gly Gly Asn Asp Val Ser Asn Ala Ile	
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Ser Lys Val Ala Thr Pro Ile Trp Leu Leu Tyr Gly Gly Val Gly	
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Gly Lys Asp Leu Thr Pro Ile Thr Pro Ser Ser Gly Phe Ser Ile Glu	
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Ile Ser Thr Thr His Cys Lys Val Gly Ser Val Val Ser Val Gly Trp	
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Leu Arg Ser Lys Lys Ala Val Asp Trp Arg Leu Phe Arg Asn Ile Phe	
640 645 650	
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Met Ala Trp Phe Val Thr Val Pro Ile Ser Gly Val Ile Ser Ala Ala	
655 660 665	
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Ile Met Ala Ile Phe Arg Tyr Val Ile Leu Arg Met
670 675

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Leu Val Met Ala Ser Leu Tyr His Ile Tyr Val Ala Leu Glu Glu Glu
50 55 60
Ile Glu Arg Asn Lys Glu Ser Pro Val Phe Ala Pro Val Tyr Phe Pro
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Glu Glu Leu His Arg Lys Ala Ala Leu Glu Gln Asp Leu Ala Phe Trp
85 90 95
Tyr Gly Pro Arg Trp Gln Glu Val Ile Pro Tyr Thr Pro Ala Met Gln

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Leu Val Ala His Ala Tyr Thr Arg Tyr Leu Gly Asp Leu Ser Gly Gly 130 135 140		
Gln Val Leu Lys Lys Ile Ala Gln Lys Ala Leu Asp Leu Pro Ser Ser 145 150 155 160		
Gly Glu Gly Leu Ala Phe Phe Thr Phe Pro Asn Ile Ala Ser Ala Thr 165 170 175		
Lys Phe Lys Gln Leu Tyr Arg Ser Arg Met Asn Ser Leu Glu Met Thr 180 185 190		
Pro Ala Val Arg Gln Arg Val Ile Glu Glu Ala Lys Thr Ala Phe Leu 195 200 205		
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Thr Lys Asp Gln Ser Pro Ser Arg Ala Pro Gly Leu Arg Gln Arg Ala 225 230 235 240		
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 <222> (81)..(944)

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 Asp Leu Ser Glu Ala Leu Lys Glu Ala Thr Lys Glu Val His Thr Gln
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 gca gag aat gct gag ttc atg agg aac ttt cag aag ggc cag gtg acc 209

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Ala	Leu	Glu	Glu	Glu	Ile	Glu	Arg	Asn	Lys	Glu	Ser	Pro	Val	Phe	Ala		
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Pro	Val	Tyr	Phe	Pro	Glu	Glu	Leu	His	Arg	Lys	Ala	Ala	Leu	Glu	Gln		
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Thr	Pro	Ala	Met	Gln	Arg	Tyr	Val	Lys	Arg	Leu	His	Glu	Val	Gly	Arg		
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Thr	Glu	Pro	Glu	Leu	Leu	Val	Ala	His	Ala	Tyr	Thr	Arg	Tyr	Leu	Gly		
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	140				145					150					155		
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Asp	Leu	Pro	Ser	Ser	Gly	Glu	Gly	Leu	Ala	Phe	Phe	Thr	Phe	Pro	Asn		
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Ile	Ala	Ser	Ala	Thr	Lys	Phe	Lys	Gln	Leu	Tyr	Arg	Ser	Arg	Met	Asn		
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Ser	Leu	Glu	Met	Thr	Pro	Ala	Val	Arg	Gln	Arg	Val	Ile	Glu	Glu	Ala		
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Lys	Thr	Ala	Phe	Leu	Leu	Asn	Ile	Gln	Leu	Phe	Glu	Glu	Leu	Gln	Glu		
	205					210					215						
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Leu	Leu	Thr	His	Asp	Thr	Lys	Asp	Gln	Ser	Pro	Ser	Arg	Ala	Pro	Gly		
	220				225					230					235		
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Leu	Arg	Gln	Arg	Ala	Ser	Asn	Lys	Val	Gln	Asp	Ser	Ala	Pro	Val	Glu		
				240				245						250			
act	ccc	aga	ggg	aag	ccc	cca	ctc	aac	acc	cgc	tcc	cag	gct	cgg	ctt	881	
Thr	Pro	Arg	Gly	Lys	Pro	Pro	Leu	Asn	Thr	Arg	Ser	Gln	Ala	Pro	Leu		

255 260 265
 ctc cga tgg gtc ctt aca ctc agc ttt ctg gtg gcg aca gtt gct gta . 929
 Leu Arg Trp Val Leu Thr Leu Ser Phe Leu Val Ala Thr Val Ala Val
 270 275 280
 ggg ctt tat gcc atg tgaatgcagg catgctggct cccagggcca tgaactttgt 984
 Gly Leu Tyr Ala Met
 285
 ccggtggaag gccttctttc tagagaggga attctcttgg ctggcttcct taccgtgggc 1044
 actgaaggct ttcagggcct ccagccctct cactgtgtcc ctctctctgg aaaggaggaa 1104
 ggagcctatg gcatcttccc caacgaaaag cacatccagg caatggccta aacttcagag 1164
 ggggcgaagg ggtcagccct gcccttcagc atcctcagtt cctgcagcag agcctggaag 1224
 acacccta atgtggcagctg tctcaaacct ccaaaagccc tgagtttcaa gtatccttgt 1284
 tgacacggcc atgaccactt tccccgtggg ccatggcaat ttttacacaa acctgaaaag 1344
 atgttggtgc ttgtgttttt gtcttatttt tgttgagacc actctgttcc tggctcagcc 1404
 tcaa atgcag tatttttgggt gtgttctggt gtttttatag cagggttggg gtggtttttg 1464
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 tgtgaaataa taaacaacat tgtctg 1550

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 <213> Homo sapiens

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 35 40 45
 Arg Phe Asn Ala His Gly Asp Ala Asn Thr Ile Val Cys Asn Ser Lys
 50 55 60
 Asp Gly Gly Ala Trp Gly Thr Glu Gln Arg Glu Ala Val Phe Pro Phe
 65 70 75 80
 Gln Pro Gly Ser Val Ala Glu Val Cys Ile Thr Phe Asp Gln Ala Asn
 85 90 95
 Leu Thr Val Lys Leu Pro Asp Gly Tyr Glu Phe Lys Phe Pro Asn Arg
 100 105 110

Leu Asn Leu Glu Ala Ile Asn Tyr Met Ala Ala Asp Gly Asp Phe Lys
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Ile Lys Cys Val Ala Phe Asp
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 Gly Leu Val Ala Ser Asn Leu Asn Leu Lys Pro Gly Glu Cys Leu Arg
 5 10 15

gtg cga ggc gag gtg gct cct gac gct aag agc ttc gtg ctg aac ctg 154
 Val Arg Gly Glu Val Ala Pro Asp Ala Lys Ser Phe Val Leu Asn Leu
 20 25 30 35

ggc aaa gac agc aac aac ctg tgc ctg cac ttc aac cct cgc ttc aac 202
 Gly Lys Asp Ser Asn Asn Leu Cys Leu His Phe Asn Pro Arg Phe Asn
 40 45 50

gcc cac ggc gac gcc aac acc atc gtg tgc aac agc aag gac ggc ggc 250
 Ala His Gly Asp Ala Asn Thr Ile Val Cys Asn Ser Lys Asp Gly Gly
 55 60 65

gcc tgg ggg acc gag cag cgg gag gct gtc ttt ccc ttc cag cct gga 298
 Ala Trp Gly Thr Glu Gln Arg Glu Ala Val Phe Pro Phe Gln Pro Gly
 70 75 80

agt gtt gca gag gtg tgc atc acc ttc gac cag gcc aac ctg acc gtc 346
 Ser Val Ala Glu Val Cys Ile Thr Phe Asp Gln Ala Asn Leu Thr Val
 85 90 95

aag ctg cca gat gga tac gaa ttc aag ttc ccc aac cgc ctc aac ctg 394
 Lys Leu Pro Asp Gly Tyr Glu Phe Lys Phe Pro Asn Arg Leu Asn Leu
 100 105 110 115

gag gcc atc aac tac atg gca gct gac ggt gac ttc aag atc aaa tgt 442
 Glu Ala Ile Asn Tyr Met Ala Ala Asp Gly Asp Phe Lys Ile Lys Cys
 120 125 130

gtg gcc ttt gac tgaaatcagc cagcccatgg cccccaataa aggcagctgc 494
 Val Ala Phe Asp
 135

ctctgctccc ctg

507

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 Asn Phe Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu Asp Val Cys Asp
 35 40 45
 Ile Pro Glu Ser Phe Gln Arg Ser Val Asp Gly Val Ser Glu Ser Lys
 50 55 60
 Leu Gln Ile Cys Val Glu Pro Thr Ser Gln Lys Leu Met Pro Gly Ser
 65 70 75 80
 Thr Leu Val Leu Gln Cys Val Ala Val Gly Ser Pro Ile Pro His Tyr
 85 90 95
 Gln Trp Phe Lys Asn Glu Leu Pro Leu Thr His Glu Thr Lys Lys Leu
 100 105 110
 Tyr Met Val Pro Tyr Val Asp Leu Glu His Gln Gly Thr Tyr Trp Cys
 115 120 125
 His Val Tyr Asn Asp Arg Asp Ser Gln Asp Ser Lys Lys Val Glu Ile
 130 135 140
 Ile Ile Gly Arg Thr Asp Glu Ala Val Glu Cys Thr Glu Asp Glu Leu
 145 150 155 160
 Asn Asn Leu Gly His Pro Asp Asn Lys Glu Gln Thr Thr Asp Gln Pro
 165 170 175
 Leu Ala Lys Asp Lys Val Ala Leu Leu Ile Gly Asn Met Asn Tyr Arg
 180 185 190
 Glu His Pro Lys Leu Lys Ala Pro Leu Val Asp Val Tyr Glu Leu Thr
 195 200 205
 Asn Leu Leu Arg Gln Leu Asp Phe Lys Val Val Ser Leu Leu Asp Leu
 210 215 220
 Thr Glu Tyr Glu Met Arg Asn Ala Val Asp Glu Phe Leu Leu Leu Leu
 225 230 235 240
 Asp Lys Gly Val Tyr Gly Leu Leu Tyr Tyr Ala Gly His Gly Tyr Glu
 245 250 255

Asn	Phe	Gly	Asn	Ser	Phe	Met	Val	Pro	Val	Asp	Ala	Pro	Asn	Pro	Tyr	
			260						265					270		
Arg	Ser	Glu	Asn	Cys	Leu	Cys	Val	Gln	Asn	Ile	Leu	Lys	Leu	Met	Gln	
		275					280					285				
Glu	Lys	Glu	Thr	Gly	Leu	Asn	Val	Phe	Leu	Leu	Asp	Met	Cys	Arg	Lys	
		290				295					300					
Arg	Asn	Asp	Tyr	Asp	Asp	Thr	Ile	Pro	Ile	Leu	Asp	Ala	Leu	Lys	Val	
305					310					315					320	
Thr	Ala	Asn	Ile	Val	Phe	Gly	Tyr	Ala	Thr	Cys	Gln	Gly	Ala	Glu	Ala	
				325					330					335		
Phe	Glu	Ile	Gln	His	Ser	Gly	Leu	Ala	Asn	Gly	Ile	Phe	Met	Lys	Phe	
			340					345					350			
Leu	Lys	Asp	Arg	Leu	Leu	Glu	Asp	Lys	Lys	Ile	Thr	Val	Leu	Leu	Asp	
		355					360					365				
Glu	Val	Ala	Glu	Asp	Met	Gly	Lys	Cys	His	Leu	Thr	Lys	Gly	Lys	Gln	
		370				375					380					
Ala	Leu	Glu	Ile	Arg	Ser	Ser	Leu	Ser	Glu	Lys	Arg	Ala	Leu	Thr	Asp	
385					390					395					400	
Pro	Ile	Gln	Gly	Thr	Glu	Tyr	Ser	Ala	Glu	Ser	Leu	Val	Arg	Asn	Leu	
				405					410					415		
Gln	Trp	Ala	Lys	Ala	His	Glu	Leu	Pro	Glu	Ser	Met	Cys	Leu	Lys	Phe	
			420					425					430			
Asp	Cys	Gly	Val	Gln	Ile	Gln	Leu	Gly	Phe	Ala	Ala	Glu	Phe	Ser	Asn	
		435					440					445				
Val	Met	Ile	Ile	Tyr	Thr	Ser	Ile	Val	Tyr	Lys	Pro	Pro	Glu	Ile	Ile	
	450					455					460					
Met	Cys	Asp	Ala	Tyr	Val	Thr	Asp	Phe	Pro	Leu	Asp	Leu	Asp	Ile	Asp	
465					470					475					480	
Pro	Lys	Asp	Ala	Asn	Lys	Gly	Thr	Pro	Glu	Glu	Thr	Gly	Ser	Tyr	Leu	
				485					490					495		
Val	Ser	Lys	Asp	Leu	Pro	Lys	His	Cys	Leu	Tyr	Thr	Arg	Leu	Ser	Ser	
			500					505					510			
Leu	Gln	Lys	Leu	Lys	Glu	His	Leu	Val	Phe	Thr	Val	Cys	Leu	Ser	Tyr	
		515					520					525				
Gln	Tyr	Ser	Gly	Leu	Glu	Asp	Thr	Val	Glu	Asp	Lys	Gln	Glu	Val	Asn	
		530				535					540					
Val	Gly	Lys	Pro	Leu	Ile	Ala	Lys	Leu	Asp	Met	His	Arg	Gly	Leu	Gly	
545					550					555					560	

Arg Lys Thr Cys Phe Gln Thr Cys Leu Met Ser Asn Gly Pro Tyr Gln
565 570 575

Ser Ser Ala Ala Thr Ser Gly Gly Ala Gly His Tyr His Ser Leu Gln
580 585 590

Asp Pro Phe His Gly Val Tyr His Ser His Pro Gly Asn Pro Ser Asn
595 600 605

Val Thr Pro Ala Asp Ser Cys His Cys Ser Arg Thr Pro Asp Ala Phe
610 615 620

Ile Ser Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg Ser Asn
625 630 635 640

Val Pro Val Glu Thr Thr Asp Glu Ile Pro Phe Ser Phe Ser Asp Arg
645 650 655

Leu Arg Ile Ser Glu Lys
660

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<211> 2251
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<222> (74)..(2059)

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tcagtgggttc aaa atg aat aaa gag att cca aat gga aat aca tca gag 109
Met Asn Lys Glu Ile Pro Asn Gly Asn Thr Ser Glu
1 5 10

ctt att ttt aat gca gtg cat gta aaa gat gca ggc ttt tat gtc tgt 157
Leu Ile Phe Asn Ala Val His Val Lys Asp Ala Gly Phe Tyr Val Cys
15 20 25

cga gtt aat aac aat ttc acc ttt gaa ttc agc cag tgg tca cag ctg 205
Arg Val Asn Asn Asn Phe Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu
30 35 40

gat gtt tgc gac atc cca gag agc ttc cag aga agt gtt gat ggc gtc 253
Asp Val Cys Asp Ile Pro Glu Ser Phe Gln Arg Ser Val Asp Gly Val
45 50 55 60

tct gaa tcc aag ttg caa atc tgt gtt gaa cca act tcc caa aag ctg 301
Ser Glu Ser Lys Leu Gln Ile Cys Val Glu Pro Thr Ser Gln Lys Leu
65 70 75

atg cca ggc agc aca ttg gtt tta cag tgt gtt gct gtt gga agc cct 349
Met Pro Gly Ser Thr Leu Val Leu Gln Cys Val Ala Val Gly Ser Pro

				80				85				90								
att	cct	cac	tac	cag	tgg	ttc	aaa	aat	gaa	tta	cca	tta	aca	cat	gag		397			
Ile	Pro	His	Tyr	Gln	Trp	Phe	Lys	Asn	Glu	Leu	Pro	Leu	Thr	His	Glu					
95				100				105												
acc	aaa	aag	cta	tac	atg	gtg	cct	tat	gtg	gat	ttg	gaa	cac	caa	gga		445			
Thr	Lys	Lys	Leu	Tyr	Met	Val	Pro	Tyr	Val	Asp	Leu	Glu	His	Gln	Gly					
110				115				120												
acc	tac	tgg	tgt	cat	gta	tat	aat	gat	cga	gac	agt	caa	gat	agc	aag		493			
Thr	Tyr	Trp	Cys	His	Val	Tyr	Asn	Asp	Arg	Asp	Ser	Gln	Asp	Ser	Lys					
125				130				135				140								
aag	gta	gaa	atc	atc	ata	gga	aga	aca	gat	gag	gca	gtg	gag	tgc	act		541			
Lys	Val	Glu	Ile	Ile	Ile	Gly	Arg	Thr	Asp	Glu	Ala	Val	Glu	Cys	Thr					
145				150								155								
gaa	gat	gaa	tta	aat	aat	ctt	ggt	cat	cct	gat	aat	aaa	gag	caa	aca		589			
Glu	Asp	Glu	Leu	Asn	Asn	Leu	Gly	His	Pro	Asp	Asn	Lys	Glu	Gln	Thr					
160				165				170												
act	gac	cag	cct	ttg	gcg	aag	gac	aag	ggt	gcc	ctt	ttg	ata	gga	aat		637			
Thr	Asp	Gln	Pro	Leu	Ala	Lys	Asp	Lys	Val	Ala	Leu	Leu	Ile	Gly	Asn					
175				180				185												
atg	aat	tac	cgg	gag	cac	ccc	aag	ctc	aaa	gct	cct	ttg	gtg	gat	gtg		685			
Met	Asn	Tyr	Arg	Glu	His	Pro	Lys	Leu	Lys	Ala	Pro	Leu	Val	Asp	Val					
190				195				200												
tac	gaa	ttg	act	aac	tta	ctg	aga	cag	ctg	gac	ttc	aaa	gtg	ggt	tca		733			
Tyr	Glu	Leu	Thr	Asn	Leu	Leu	Arg	Gln	Leu	Asp	Phe	Lys	Val	Val	Ser					
205				210				215				220								
ctg	ttg	gat	ctt	act	gaa	tat	gag	atg	cgt	aat	gct	gtg	gat	gag	ttt		781			
Leu	Leu	Asp	Leu	Thr	Glu	Tyr	Glu	Met	Arg	Asn	Ala	Val	Asp	Glu	Phe					
225				230				235												
tta	ctc	ctt	tta	gac	aag	gga	gta	tat	ggg	tta	tta	tat	tat	gca	gga		829			
Leu	Leu	Leu	Leu	Asp	Lys	Gly	Val	Tyr	Gly	Leu	Leu	Tyr	Tyr	Ala	Gly					
240				245				250												
cat	ggt	tat	gaa	aat	ttt	ggg	aac	agc	ttc	atg	gtc	ccc	ggt	gat	gct		877			
His	Gly	Tyr	Glu	Asn	Phe	Gly	Asn	Ser	Phe	Met	Val	Pro	Val	Asp	Ala					
255				260				265												
cca	aat	cca	tat	agg	tct	gaa	aat	tgt	ctg	tgt	gta	caa	aat	ata	ctg		925			
Pro	Asn	Pro	Tyr	Arg	Ser	Glu	Asn	Cys	Leu	Cys	Val	Gln	Asn	Ile	Leu					
270				275				280												
aaa	ttg	atg	caa	gaa	aaa	gaa	act	gga	ctt	aat	gtg	ttc	tta	ttg	gat		973			
Lys	Leu	Met	Gln	Glu	Lys	Glu	Thr	Gly	Leu	Asn	Val	Phe	Leu	Leu	Asp					
285				290				295				300								
atg	tgt	agg	aaa	aga	aat	gac	tac	gat	gat	acc	att	cca	atc	ttg	gat		1021			

gca cta aaa gtc acc gcc aat att gtg ttt gga tat gcc acg tgt caa	1069
Ala Leu Lys Val Thr Ala Asn Ile Val Phe Gly Tyr Ala Thr Cys Gln	
320 325 330	
gga gca gaa gct ttt gaa atc cag cat tct gga ttg gca aat gga atc	1117
Gly Ala Glu Ala Phe Glu Ile Gln His Ser Gly Leu Ala Asn Gly Ile	
335 340 345	
ttt atg aaa ttt tta aaa gac aga tta tta gaa gat aag aaa atc act	1165
Phe Met Lys Phe Leu Lys Asp Arg Leu Leu Glu Asp Lys Lys Ile Thr	
350 355 360	
gtg tta ctg gat gaa gtt gca gaa gat atg ggt aag tgt cac ctt acc	1213
Val Leu Leu Asp Glu Val Ala Glu Asp Met Gly Lys Cys His Leu Thr	
365 370 375 380	
aaa ggc aaa cag gct cta gag att cga agt agt tta tct gag aag aga	1261
Lys Gly Lys Gln Ala Leu Glu Ile Arg Ser Ser Leu Ser Glu Lys Arg	
385 390 395	
gca ctt act gat cca ata cag gga aca gaa tat tct gct gaa tct ctt	1309
Ala Leu Thr Asp Pro Ile Gln Gly Thr Glu Tyr Ser Ala Glu Ser Leu	
400 405 410	
gtg cgg aat cta cag tgg gcc aag gct cat gaa ctt cca gaa agt atg	1357
Val Arg Asn Leu Gln Trp Ala Lys Ala His Glu Leu Pro Glu Ser Met	
415 420 425	
tgt ctt aag ttt gac tgt ggt gtt cag att caa tta gga ttt gca gct	1405
Cys Leu Lys Phe Asp Cys Gly Val Gln Ile Gln Leu Gly Phe Ala Ala	
430 435 440	
gag ttt tcc aat gtc atg atc atc tat aca agt ata gtt tac aaa cca	1453
Glu Phe Ser Asn Val Met Ile Ile Tyr Thr Ser Ile Val Tyr Lys Pro	
445 450 455 460	
ccg gag ata ata atg tgt gat gcc tac gtt act gat ttt cca ctt gat	1501
Pro Glu Ile Ile Met Cys Asp Ala Tyr Val Thr Asp Phe Pro Leu Asp	
465 470 475	
cta gat att gat cca aaa gat gca aat aaa ggc aca cct gaa gaa act	1549
Leu Asp Ile Asp Pro Lys Asp Ala Asn Lys Gly Thr Pro Glu Glu Thr	
480 485 490	
ggc agc tac ttg gta tca aag gat ctt ccc aag cat tgc ctc tat acc	1597
Gly Ser Tyr Leu Val Ser Lys Asp Leu Pro Lys His Cys Leu Tyr Thr	
495 500 505	
aga ctc agt tca ctg caa aaa tta aag gaa cat cta gtc ttc aca gta	1645
Arg Leu Ser Ser Leu Gln Lys Leu Lys Glu His Leu Val Phe Thr Val	
510 515 520	
tgt tta tca tat cag tac tca gga ttg gaa gat act gta gag gac aag	1693
Cys Leu Ser Tyr Gln Tyr Ser Gly Leu Glu Asp Thr Val Glu Asp Lys	
525 530 535 540	

cag gaa gtg aat gtt ggg aaa cct ctc att gct aaa tta gac atg cat 1741
 Gln Glu Val Asn Val Gly Lys Pro Leu Ile Ala Lys Leu Asp Met His
 545 550 555

cga ggt ttg gga agg aag act tgc ttt caa act tgt ctt atg tct aat 1789
 Arg Gly Leu Gly Arg Lys Thr Cys Phe Gln Thr Cys Leu Met Ser Asn
 560 565 570

ggt cct tac cag agt tct gca gcc acc tca gga gga gca ggg cat tat 1837
 Gly Pro Tyr Gln Ser Ser Ala Ala Thr Ser Gly Gly Ala Gly His Tyr
 575 580 585

cac tca ttg caa gac cca ttc cat ggt gtt tac cat tca cat cct ggt 1885
 His Ser Leu Gln Asp Pro Phe His Gly Val Tyr His Ser His Pro Gly
 590 595 600

aat cca agt aat gtt aca cca gca gat agc tgt cat tgc agc cgg act 1933
 Asn Pro Ser Asn Val Thr Pro Ala Asp Ser Cys His Cys Ser Arg Thr
 605 610 615 620

cca gat gca ttt att tca agt ttc gct cac cat gct tca tgt cat ttt 1981
 Pro Asp Ala Phe Ile Ser Ser Phe Ala His His Ala Ser Cys His Phe
 625 630 635

agt aga agt aat gtg cca gta gag aca act gat gaa ata cca ttt agt 2029
 Ser Arg Ser Asn Val Pro Val Glu Thr Thr Asp Glu Ile Pro Phe Ser
 640 645 650

ttc tct gac agg ctc aga att tct gaa aaa tgacctcctt gtttttgaaa 2079
 Phe Ser Asp Arg Leu Arg Ile Ser Glu Lys
 655 660

gtttagcataa ttttagatgc ctgtgaaata gtactgcact tacataaagt gagacattgt 2139

gaaaaggcaa atttgtatat gtagagaaag aatagtagta actgtttcat agcaaacttc 2199

aggactttga gatgttgaaa ttacattatt taattacaga ctctctcttt ct 2251

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 35 40 45
 Pro Glu Gly Arg Gly Trp Arg Arg Leu Ala Glu Leu Ala Gly Ser Arg
 50 55 60

Gly Arg Leu Arg Leu Ser Cys Leu Asp Leu Glu Gln Cys Ser Leu Lys
 65 70 75 80
 Val Leu Glu Pro Glu Gly Ser Pro Ser Leu Cys Leu Leu Lys Leu Met
 85 90 95
 Gly Glu Lys Gly Cys Thr Val Thr Glu Leu Ser Asp Phe Leu Gln Ala
 100 105 110
 Met Glu His Thr Glu Val Leu Gln Leu Leu Ser Pro Pro Gly Ile Lys
 115 120 125
 Ile Thr Val Asn Pro Glu Ser Lys Ala Val Leu Ala Gly Gln Phe Val
 130 135 140
 Lys Leu Cys Cys Arg Ala Thr Gly His Pro Phe Val Gln Tyr Gln Trp
 145 150 155 160
 Phe Lys Met Asn Lys Glu Ile Pro Asn Gly Asn Thr Ser Glu Leu Ile
 165 170 175
 Phe Asn Ala Val His Val Lys Asp Ala Gly Phe Tyr Val Cys Arg Val
 180 185 190
 Asn Asn Asn Phe Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu Asp Val
 195 200 205
 Cys Asp Ile Pro Glu Ser Phe Gln Arg Ser Val Asp Gly Val Ser Glu
 210 215 220
 Ser Lys Leu Gln Ile Cys Val Glu Pro Thr Ser Gln Lys Leu Met Pro
 225 230 235 240
 Gly Ser Thr Leu Val Leu Gln Cys Val Ala Val Gly Ser Pro Ile Pro
 245 250 255
 His Tyr Gln Trp Phe Lys Asn Glu Leu Pro Leu Thr His Glu Thr Lys
 260 265 270
 Lys Leu Tyr Met Val Pro Tyr Val Asp Leu Glu His Gln Gly Thr Tyr
 275 280 285
 Trp Cys His Val Tyr Asn Asp Arg Asp Ser Gln Asp Ser Lys Lys Val
 290 295 300
 Glu Ile Ile Ile Gly Arg Thr Asp Glu Ala Val Glu Cys Thr Glu Asp
 305 310 315 320
 Glu Leu Asn Asn Leu Gly His Pro Asp Asn Lys Glu Gln Thr Thr Asp
 325 330 335
 Gln Pro Leu Ala Lys Asp Lys Val Ala Leu Leu Ile Gly Asn Met Asn
 340 345 350
 Tyr Arg Glu His Pro Lys Leu Lys Ala Pro Leu Val Asp Val Tyr Glu
 355 360 365

Leu Thr Asn Leu Leu Arg Gln Leu Asp Phe Lys Val Val Ser Leu Leu
 370 375 380
 Asp Leu Thr Glu Tyr Glu Met Arg Asn Ala Val Asp Glu Phe Leu Leu
 385 390 395 400
 Leu Leu Asp Lys Gly Val Tyr Gly Leu Leu Tyr Tyr Ala Gly His Gly
 405 410 415
 Tyr Glu Asn Phe Gly Asn Ser Phe Met Val Pro Val Asp Ala Pro Asn
 420 425 430
 Pro Tyr Arg Ser Glu Asn Cys Leu Cys Val Gln Asn Ile Leu Lys Leu
 435 440 445
 Met Gln Glu Lys Glu Thr Gly Leu Asn Val Phe Leu Leu Asp Met Cys
 450 455 460
 Arg Lys Arg Asn Asp Tyr Asp Asp Thr Ile Pro Ile Leu Asp Ala Leu
 465 470 475 480
 Lys Val Thr Ala Asn Ile Val Phe Gly Tyr Ala Thr Cys Gln Gly Ala
 485 490 495
 Glu Ala Phe Glu Ile Gln His Ser Gly Leu Ala Asn Gly Ile Phe Met
 500 505 510
 Lys Phe Leu Lys Asp Arg Leu Leu Glu Asp Lys Lys Ile Thr Val Leu
 515 520 525
 Leu Asp Glu Val Ala Glu Asp Met Gly Lys Cys His Leu Thr Lys Gly
 530 535 540
 Lys Gln Ala Leu Glu Ile Arg Ser Ser Leu Ser Glu Lys Arg Ala Leu
 545 550 555 560
 Thr Asp Pro Ile Gln Gly Thr Glu Tyr Ser Ala Glu Ser Leu Val Arg
 565 570 575
 Asn Leu Gln Trp Ala Lys Ala His Glu Leu Pro Glu Ser Met Cys Leu
 580 585 590
 Lys Phe Asp Cys Gly Val Gln Ile Gln Leu Gly Phe Ala Ala Glu Phe
 595 600 605
 Ser Asn Val Met Ile Ile Tyr Thr Ser Ile Val Tyr Lys Pro Pro Glu
 610 615 620
 Ile Ile Met Cys Asp Ala Tyr Val Thr Asp Phe Pro Leu Asp Leu Asp
 625 630 635 640
 Ile Asp Pro Lys Asp Ala Asn Lys Gly Thr Pro Glu Glu Thr Gly Ser
 645 650 655
 Tyr Leu Val Ser Lys Asp Leu Pro Lys His Cys Leu Tyr Thr Arg Leu
 660 665 670

Ser Ser Leu Gln Lys Leu Lys Glu His Leu Val Phe Thr Val Cys Leu
675 680 685

Ser Tyr Gln Tyr Ser Gly Leu Glu Asp Thr Val Glu Asp Lys Gln Glu
690 695 700

Val Asn Val Gly Lys Pro Leu Ile Ala Lys Leu Asp Met His Arg Gly
705 710 715 720

Leu Gly Arg Lys Thr Cys Phe Gln Thr Cys Leu Met Ser Asn Gly Pro
725 730 735

Tyr Gln Ser Ser Ala Ala Thr Ser Gly Gly Ala Gly His Tyr His Ser
740 745 750

Leu Gln Asp Pro Phe His Gly Val Tyr His Ser His Pro Gly Asn Pro
755 760 765

Ser Asn Val Thr Pro Ala Asp Ser Cys His Cys Ser Arg Thr Pro Asp
770 775 780

Ala Phe Ile Ser Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg
785 790 795 800

Ser Asn Val Pro Val Glu Thr Thr Asp Glu Ile Pro Phe Ser Phe Ser
805 810 815

Asp Arg Leu Arg Ile Ser Glu Lys
820

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<213> Homo sapiens

<220>
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<222> (165)..(2636)

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gcccctgcct ccgcggctcg gaggcgagcg gaagggtgcc cggggccgag gcccgtagcg 120
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Met Ser Leu Leu
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ggg gac ccg cta cag gcc ctg ccg ccc tcg gcc gcc ccc acg ggg ccg 224
Gly Asp Pro Leu Gln Ala Leu Pro Pro Ser Ala Ala Pro Thr Gly Pro
5 10 15 20

ctg ctg gcc cct ccg gcc gcc gcc acc ctc aac cgc ctg cgg gag ccg 272
Leu Leu Ala Pro Pro Ala Gly Ala Thr Leu Asn Arg Leu Arg Glu Pro
25 30 35

ctg ctg cgg agg ctc agc gag ctc ctg gat cag gcg ccc gag ggc cgg	320
Leu Leu Arg Arg Leu Ser Glu Leu Leu Asp Gln Ala Pro Glu Gly Arg	
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Gly Trp Arg Arg Leu Ala Glu Leu Ala Gly Ser Arg Gly Arg Leu Arg	
55 60 65	
ctc agt tgc cta gac ctg gag cag tgt tct ctt aag gta ctg gag cct	416
Leu Ser Cys Leu Asp Leu Glu Gln Cys Ser Leu Lys Val Leu Glu Pro	
70 75 80	
gaa gga agc ccc agc ctg tgt ctg ctg aag tta atg ggt gaa aaa ggt	464
Glu Gly Ser Pro Ser Leu Cys Leu Leu Lys Leu Met Gly Glu Lys Gly	
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Cys Thr Val Thr Glu Leu Ser Asp Phe Leu Gln Ala Met Glu His Thr	
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gaa gtt ctt cag ctt ctc agc ccc cca gga ata aag att act gta aac	560
Glu Val Leu Gln Leu Leu Ser Pro Pro Gly Ile Lys Ile Thr Val Asn	
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cca gag tca aag gca gtc ttg gct gga cag ttt gtg aaa ctg tgt tgc	608
Pro Glu Ser Lys Ala Val Leu Ala Gly Gln Phe Val Lys Leu Cys Cys	
135 140 145	
cgg gca act gga cat cct ttt gtt caa tat cag tgg ttc aaa atg aat	656
Arg Ala Thr Gly His Pro Phe Val Gln Tyr Gln Trp Phe Lys Met Asn	
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aaa gag att cca aat gga aat aca tca gag ctt att ttt aat gca gtg	704
Lys Glu Ile Pro Asn Gly Asn Thr Ser Glu Leu Ile Phe Asn Ala Val	
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cat gta aaa gat gca ggc ttt tat gtc tgt cga gtt aat aac aat ttc	752
His Val Lys Asp Ala Gly Phe Tyr Val Cys Arg Val Asn Asn Asn Phe	
185 190 195	
acc ttt gaa ttc agc cag tgg tca cag ctg gat gtt tgc gac atc cca	800
Thr Phe Glu Phe Ser Gln Trp Ser Gln Leu Asp Val Cys Asp Ile Pro	
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Glu Ser Phe Gln Arg Ser Val Asp Gly Val Ser Glu Ser Lys Leu Gln	
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atc tgt gtt gaa cca act tcc caa aag ctg atg cca ggc agc aca ttg	896
Ile Cys Val Glu Pro Thr Ser Gln Lys Leu Met Pro Gly Ser Thr Leu	
230 235 240	
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Val Leu Gln Cys Val Ala Val Gly Ser Pro Ile Pro His Tyr Gln Trp	
245 250 255 260	
ttc aaa aat gaa tta cca tta aca cat gag acc aaa aag cta tac atg	992

Phe	Lys	Asn	Glu	Leu	Pro	Leu	Thr	His	Glu	Thr	Lys	Lys	Leu	Tyr	Met	
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gtg	cct	tat	gtg	gat	ttg	gaa	cac	caa	gga	acc	tac	tgg	tgt	cat	gta	1040
Val	Pro	Tyr	Val	Asp	Leu	Glu	His	Gln	Gly	Thr	Tyr	Trp	Cys	His	Val	
			280					285					290			
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Tyr	Asn	Asp	Arg	Asp	Ser	Gln	Asp	Ser	Lys	Lys	Val	Glu	Ile	Ile	Ile	
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gga	aga	aca	gat	gag	gca	gtg	gag	tgc	act	gaa	gat	gaa	tta	aat	aat	1136
Gly	Arg	Thr	Asp	Glu	Ala	Val	Glu	Cys	Thr	Glu	Asp	Glu	Leu	Asn	Asn	
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Leu	Gly	His	Pro	Asp	Asn	Lys	Glu	Gln	Thr	Thr	Asp	Gln	Pro	Leu	Ala	
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aag	gac	aag	gtt	gcc	ctt	ttg	ata	gga	aat	atg	aat	tac	cgg	gag	cac	1232
Lys	Asp	Lys	Val	Ala	Leu	Leu	Ile	Gly	Asn	Met	Asn	Tyr	Arg	Glu	His	
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ccc	aag	ctc	aaa	gct	cct	ttg	gtg	gat	gtg	tac	gaa	ttg	act	aac	tta	1280
Pro	Lys	Leu	Lys	Ala	Pro	Leu	Val	Asp	Val	Tyr	Glu	Leu	Thr	Asn	Leu	
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ctg	aga	cag	ctg	gac	ttc	aaa	gtg	gtt	tca	ctg	ttg	gat	ctt	act	gaa	1328
Leu	Arg	Gln	Leu	Asp	Phe	Lys	Val	Val	Ser	Leu	Leu	Asp	Leu	Thr	Glu	
		375					380					385				
tat	gag	atg	cgt	aat	gct	gtg	gat	gag	ttt	tta	ctc	ctt	tta	gac	aag	1376
Tyr	Glu	Met	Arg	Asn	Ala	Val	Asp	Glu	Phe	Leu	Leu	Leu	Leu	Asp	Lys	
	390					395					400					
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Gly	Val	Tyr	Gly	Leu	Leu	Tyr	Tyr	Ala	Gly	His	Gly	Tyr	Glu	Asn	Phe	
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Gly	Asn	Ser	Phe	Met	Val	Pro	Val	Asp	Ala	Pro	Asn	Pro	Tyr	Arg	Ser	
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gaa	aat	tgt	ctg	tgt	gta	caa	aat	ata	ctg	aaa	ttg	atg	caa	gaa	aaa	1520
Glu	Asn	Cys	Leu	Cys	Val	Gln	Asn	Ile	Leu	Lys	Leu	Met	Gln	Glu	Lys	
			440					445					450			
gaa	act	gga	ctt	aat	gtg	ttc	tta	ttg	gat	atg	tgt	agg	aaa	aga	aat	1568
Glu	Thr	Gly	Leu	Asn	Val	Phe	Leu	Leu	Asp	Met	Cys	Arg	Lys	Arg	Asn	
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gac	tac	gat	gat	acc	att	cca	atc	ttg	gat	gca	cta	aaa	gtc	acc	gcc	1616
Asp	Tyr	Asp	Asp	Thr	Ile	Pro	Ile	Leu	Asp	Ala	Leu	Lys	Val	Thr	Ala	
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aat	att	gtg	ttt	gga	tat	gcc	acg	tgt	caa	gga	gca	gaa	gct	ttt	gaa	1664
Asn	Ile	Val	Phe	Gly	Tyr	Ala	Thr	Cys	Gln	Gly	Ala	Glu	Ala	Phe	Glu	

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Ile Gln His Ser Gly Leu Ala Asn Gly Ile Phe Met Lys Phe Leu Lys	505	510	515	
gac aga tta tta gaa gat aag aaa atc act gtg tta ctg gat gaa gtt				1760
Asp Arg Leu Leu Glu Asp Lys Lys Ile Thr Val Leu Leu Asp Glu Val	520	525	530	
gca gaa gat atg ggt aag tgt cac ctt acc aaa ggc aaa cag gct cta				1808
Ala Glu Asp Met Gly Lys Cys His Leu Thr Lys Gly Lys Gln Ala Leu	535	540	545	
gag att cga agt agt tta tct gag aag aga gca ctt act gat cca ata				1856
Glu Ile Arg Ser Ser Leu Ser Glu Lys Arg Ala Leu Thr Asp Pro Ile	550	555	560	
cag gga aca gaa tat tct gct gaa tct ctt gtg cgg aat cta cag tgg				1904
Gln Gly Thr Glu Tyr Ser Ala Glu Ser Leu Val Arg Asn Leu Gln Trp	565	570	575	580
gcc aag gct cat gaa ctt cca gaa agt atg tgt ctt aag ttt gac tgt				1952
Ala Lys Ala His Glu Leu Pro Glu Ser Met Cys Leu Lys Phe Asp Cys	585	590	595	
ggt gtt cag att caa tta gga ttt gca gct gag ttt tcc aat gtc atg				2000
Gly Val Gln Ile Gln Leu Gly Phe Ala Ala Glu Phe Ser Asn Val Met	600	605	610	
atc atc tat aca agt ata gtt tac aaa cca ccg gag ata ata atg tgt				2048
Ile Ile Tyr Thr Ser Ile Val Tyr Lys Pro Pro Glu Ile Ile Met Cys	615	620	625	
gat gcc tac gtt act gat ttt cca ctt gat cta gat att gat cca aaa				2096
Asp Ala Tyr Val Thr Asp Phe Pro Leu Asp Leu Asp Ile Asp Pro Lys	630	635	640	
gat gca aat aaa ggc aca cct gaa gaa act ggc agc tac ttg gta tca				2144
Asp Ala Asn Lys Gly Thr Pro Glu Glu Thr Gly Ser Tyr Leu Val Ser	645	650	655	660
aag gat ctt ccc aag cat tgc ctc tat acc aga ctc agt tca ctg caa				2192
Lys Asp Leu Pro Lys His Cys Leu Tyr Thr Arg Leu Ser Ser Leu Gln	665	670	675	
aaa tta aag gaa cat cta gtc ttc aca gta tgt tta tca tat cag tac				2240
Lys Leu Lys Glu His Leu Val Phe Thr Val Cys Leu Ser Tyr Gln Tyr	680	685	690	
tca gga ttg gaa gat act gta gag gac aag cag gaa gtg aat gtt ggg				2288
Ser Gly Leu Glu Asp Thr Val Glu Asp Lys Gln Glu Val Asn Val Gly	695	700	705	
aaa cct ctc att gct aaa tta gac atg cat cga ggt ttg gga agg aag				2336
Lys Pro Leu Ile Ala Lys Leu Asp Met His Arg Gly Leu Gly Arg Lys	710	715	720	

act tgc ttt caa act tgt ctt atg tct aat ggt cct tac cag agt tct 2384
 Thr Cys Phe Gln Thr Cys Leu Met Ser Asn Gly Pro Tyr Gln Ser Ser
 725 730 735 740

gca gcc acc tca gga gga gca ggg cat tat cac tca ttg caa gac cca 2432
 Ala Ala Thr Ser Gly Gly Ala Gly His Tyr His Ser Leu Gln Asp Pro
 745 750 755

ttc cat ggt gtt tac cat tca cat cct ggt aat cca agt aat gtt aca 2480
 Phe His Gly Val Tyr His Ser His Pro Gly Asn Pro Ser Asn Val Thr
 760 765 770

cca gca gat agc tgt cat tgc agc cgg act cca gat gca ttt att tca 2528
 Pro Ala Asp Ser Cys His Cys Ser Arg Thr Pro Asp Ala Phe Ile Ser
 775 780 785

agt ttc gct cac cat gct tca tgt cat ttt agt aga agt aat gtg cca 2576
 Ser Phe Ala His His Ala Ser Cys His Phe Ser Arg Ser Asn Val Pro
 790 795 800

gta gag aca act gat gaa ata cca ttt agt ttc tct gac agg ctc aga 2624
 Val Glu Thr Thr Asp Glu Ile Pro Phe Ser Phe Ser Asp Arg Leu Arg
 805 810 815 820

att tct gaa aaa tgacctcctt gtttttgaaa gtttagcataa ttttagatgc 2676
 Ile Ser Glu Lys

ctgtgaaata gtactgcact tacataaagt gagacattgt gaaaaggcaa atttgtatat 2736

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 35 40 45

Cys Glu Val Ser His Arg Arg Ala Phe His Gly Trp Asn Glu Phe Asp
 50 55 60

Ile Ser Glu Asp Glu Pro Leu Trp Lys Lys Tyr Ile Ser Gln Phe Lys
 65 70 75 80

Asn Pro Leu Ile Met Leu Leu Leu Ala Ser Ala Val Ile Ser Val Leu

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Met	His	Gln	Phe	Asp	Asp	Ala	Val	Ser	Ile	Thr	Val	Ala	Ile	Leu	Ile				
			100					105					110						
Val	Val	Thr	Val	Ala	Phe	Val	Gln	Glu	Tyr	Arg	Ser	Glu	Lys	Ser	Leu				
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Glu	Glu	Leu	Ser	Lys	Leu	Val	Pro	Pro	Glu	Cys	His	Cys	Val	Arg	Glu				
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Gly	Lys	Leu	Glu	His	Thr	Leu	Ala	Arg	Asp	Leu	Val	Pro	Gly	Asp	Thr				
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Val	Cys	Leu	Ser	Val	Gly	Asp	Arg	Val	Pro	Ala	Asp	Leu	Arg	Leu	Phe				
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Glu	Ala	Val	Asp	Leu	Ser	Ile	Asp	Glu	Ser	Ser	Leu	Thr	Gly	Glu	Thr				
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Thr	Pro	Cys	Ser	Lys	Val	Thr	Ala	Pro	Gln	Pro	Ala	Ala	Thr	Asn	Gly				
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Asp	Leu	Ala	Ser	Arg	Ser	Asn	Ile	Ala	Phe	Met	Gly	Thr	Leu	Val	Arg				
	210					215					220								
Cys	Gly	Lys	Ala	Lys	Gly	Val	Val	Ile	Gly	Thr	Gly	Glu	Asn	Ser	Glu				
225					230					235					240				
Phe	Gly	Glu	Val	Phe	Lys	Met	Met	Gln	Ala	Glu	Glu	Ala	Pro	Lys	Thr				
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Pro	Leu	Gln	Lys	Ser	Met	Asp	Leu	Leu	Gly	Lys	Gln	Leu	Ser	Phe	Tyr				
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Ser	Phe	Gly	Ile	Ile	Gly	Ile	Ile	Met	Leu	Val	Gly	Trp	Leu	Leu	Gly				
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Lys	Asp	Ile	Leu	Glu	Met	Phe	Thr	Ile	Ser	Val	Ser	Leu	Ala	Val	Ala				
	290					295					300								
Ala	Ile	Pro	Glu	Gly	Leu	Pro	Ile	Val	Val	Thr	Val	Thr	Leu	Ala	Leu				
305					310					315					320				
Gly	Val	Met	Arg	Met	Val	Lys	Lys	Arg	Ala	Ile	Val	Lys	Lys	Leu	Pro				
				325					330					335					
Ile	Val	Glu	Thr	Leu	Gly	Cys	Cys	Asn	Val	Ile	Cys	Ser	Asp	Lys	Thr				
			340					345					350						
Gly	Thr	Leu	Thr	Lys	Asn	Glu	Met	Thr	Val	Thr	His	Ile	Phe	Thr	Ser				
		355					360					365							
Asp	Gly	Leu	His	Ala	Glu	Val	Thr	Gly	Val	Gly	Tyr	Asn	Gln	Phe	Gly				
	370					375					380								
Glu	Val	Ile	Val	Asp	Gly	Asp	Val	Val	His	Gly	Phe	Tyr	Asn	Pro	Ala				

385		390		395		400
Val Ser Arg Ile	Val Glu Ala Gly Cys	Val Cys Asn Asp Ala	Val Ile			
	405		410			415
Arg Asn Asn Thr	Leu Met Gly Lys	Pro Thr Glu Gly Ala	Leu Ile Ala			
	420		425			430
Leu Ala Met Lys	Met Gly Leu Asp Gly	Leu Gln Gln Asp Tyr	Ile Arg			
	435		440			445
Lys Ala Glu Tyr	Pro Phe Ser Ser	Glu Gln Lys Trp	Met Ala Val Lys			
	450		455			460
Cys Val His Arg	Thr Gln Gln Asp Arg	Pro Glu Ile Cys Phe	Met Lys			
	465		470			475
Gly Ala Tyr Glu	Gln Val Ile Lys Tyr	Cys Thr Thr Tyr Gln	Ser Lys			
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Gly Gln Thr Leu	Thr Leu Thr Gln Gln	Gln Arg Asp Val Tyr	Gln Gln			
	500		505			510
Glu Lys Ala Arg	Met Gly Ser Ala Gly	Leu Arg Val Leu	Ala Leu Ala			
	515		520			525
Ser Gly Pro Glu	Leu Gly Gln Leu Thr	Phe Leu Gly Leu	Val Gly Ile			
	530		535			540
Ile Asp Pro Pro	Arg Thr Gly Val Lys	Glu Ala Val Thr Thr	Leu Ile			
	545		550			555
Ala Ser Gly Val	Ser Ile Lys Met Ile	Thr Gly Asp Ser Gln	Glu Thr			
	565		570			575
Ala Val Ala Ile	Ala Ser Arg Leu Gly	Leu Tyr Ser Lys Thr	Ser Gln			
	580		585			590
Ser Val Ser Gly	Glu Glu Ile Asp Ala	Met Asp Val Gln Gln	Leu Ser			
	595		600			605
Gln Ile Val Pro	Lys Val Ala Val Phe Tyr	Arg Ala Ser Pro Arg	His			
	610		615			620
Lys Met Lys Ile	Ile Lys Ser Leu Gln Lys	Asn Gly Ser Val Val	Ala			
	625		630			635
Met Thr Gly Asp	Gly Val Asn Asp Ala Val	Ala Leu Lys Ala Ala	Asp			
	645		650			655
Ile Gly Val Ala	Met Gly Gln Thr Gly	Thr Asp Val Cys Lys	Glu Ala			
	660		665			670
Ala Asp Met Ile	Leu Val Asp Asp Asp	Phe Gln Thr Ile Met	Ser Ala			
	675		680			685
Ile Glu Glu Gly	Lys Gly Ile Tyr Asn	Asn Ile Lys Asn Phe	Val Arg			

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Phe Gln Leu Ser Thr Ser Ile Ala Ala Leu Thr Leu Ile Ser Leu Ala		
705	710	715 720
Thr Leu Met Asn Phe Pro Asn Pro Leu Asn Ala Met Gln Ile Leu Trp		
	725	730 735
Ile Asn Ile Ile Met Asp Gly Pro Pro Ala Gln Ser Leu Gly Val Glu		
	740	745 750
Pro Val Asp Lys Asp Val Ile Arg Lys Pro Pro Arg Asn Trp Lys Asp		
	755	760 765
Ser Ile Leu Thr Lys Asn Leu Ile Leu Lys Ile Leu Val Ser Ser Ile		
	770	775 780
Ile Ile Val Cys Gly Thr Leu Phe Val Phe Trp Arg Glu Leu Arg Asp		
785	790	795 800
Asn Val Ile Thr Pro Arg Asp Thr Thr Met Thr Phe Thr Cys Phe Val		
	805	810 815
Phe Phe Asp Met Phe Asn Ala Leu Ser Ser Arg Ser Gln Thr Lys Ser		
	820	825 830
Val Phe Glu Ile Gly Leu Cys Ser Asn Arg Met Phe Cys Tyr Ala Val		
	835	840 845
Leu Gly Ser Ile Met Gly Gln Leu Leu Val Ile Tyr Phe Pro Pro Leu		
	850	855 860
Gln Lys Val Phe Gln Thr Glu Ser Leu Ser Ile Leu Asp Leu Leu Phe		
865	870	875 880
Leu Leu Gly Leu Thr Ser Ser Val Cys Ile Val Ala Glu Ile Ile Lys		
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Glu Thr Met Ile Pro Val Leu Thr Ser Lys Lys Ala Ser Glu Leu Pro
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Val Ser Glu Val Ala Ser Ile Leu Gln Ala Asp Leu Gln Asn Gly Leu
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Asn Lys Cys Glu Val Ser His Arg Arg Ala Phe His Gly Trp Asn Glu
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Val Leu Met His Gln Phe Asp Asp Ala Val Ser Ile Thr Val Ala Ile
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ctt atc gtt gtt aca gtt gcc ttt gtt cag gaa tat cgt tca gaa aaa 804
Leu Ile Val Val Thr Val Ala Phe Val Gln Glu Tyr Arg Ser Glu Lys
115 120 125
tct ctt gaa gaa ttg agt aaa ctt gtg cca cca gaa tgc cat tgt gtg 852
Ser Leu Glu Glu Leu Ser Lys Leu Val Pro Pro Glu Cys His Cys Val
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cgt gaa gga aaa ttg gag cat aca ctt gcc cga gac ttg gtt cca ggt 900
Arg Glu Gly Lys Leu Glu His Thr Leu Ala Arg Asp Leu Val Pro Gly
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gat aca gtt tgc ctt tct gtt ggg gat aga gtt cct gct gac tta cgc 948
Asp Thr Val Cys Leu Ser Val Gly Asp Arg Val Pro Ala Asp Leu Arg
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ttg ttt gag gct gtg gat ctt tcc att gat gag tcc agc ttg aca ggt 996

Leu Phe Glu Ala Val Asp Leu Ser Ile Asp Glu Ser Ser Leu Thr Gly
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 Val Arg Cys Gly Lys Ala Lys Gly Val Val Ile Gly Thr Gly Glu Asn
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 Ser Glu Phe Gly Glu Val Phe Lys Met Met Gln Ala Glu Glu Ala Pro
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 Lys Thr Pro Leu Gln Lys Ser Met Asp Leu Leu Gly Lys Gln Leu Ser
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 Leu Pro Ile Val Glu Thr Leu Gly Cys Cys Asn Val Ile Cys Ser Asp
 335 340 345 350

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 Lys Thr Gly Thr Leu Thr Lys Asn Glu Met Thr Val Thr His Ile Phe
 355 360 365

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 Thr Ser Asp Gly Leu His Ala Glu Val Thr Gly Val Gly Tyr Asn Gln
 370 375 380

ttt ggg gaa gtg att gtt gat ggt gat gtt gtt cat gga ttc tat aac 1620
 Phe Gly Glu Val Ile Val Asp Gly Asp Val Val His Gly Phe Tyr Asn
 385 390 395

cca gct gtt agc aga att gtt gag gcg ggc tgt gtg tgc aat gat gct 1668
 Pro Ala Val Ser Arg Ile Val Glu Ala Gly Cys Val Cys Asn Asp Ala

400				405				410								
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Ile	Ala	Leu	Ala	Met	Lys	Met	Gly	Leu	Asp	Gly	Leu	Gln	Gln	Asp	Tyr	
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Ile	Arg	Lys	Ala	Glu	Tyr	Pro	Phe	Ser	Ser	Glu	Gln	Lys	Trp	Met	Ala	
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Leu	Ile	Ala	Ser	Gly	Val	Ser	Ile	Lys	Met	Ile	Thr	Gly	Asp	Ser	Gln	
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gag	act	gca	gtt	gca	atc	gcc	agt	cgt	ctg	gga	ttg	tat	tcc	aaa	act	2196
Glu	Thr	Ala	Val	Ala	Ile	Ala	Ser	Arg	Leu	Gly	Leu	Tyr	Ser	Lys	Thr	
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Ser	Gln	Ser	Val	Ser	Gly	Glu	Glu	Ile	Asp	Ala	Met	Asp	Val	Gln	Gln	
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ctt	tca	caa	ata	gta	cca	aag	gtt	gca	gta	ttt	tac	aga	gct	agc	cca	2292
Leu	Ser	Gln	Ile	Val	Pro	Lys	Val	Ala	Val	Phe	Tyr	Arg	Ala	Ser	Pro	
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10351630

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865 870 875

ttg ttt ctt ttg ggt ctc acc tca tca gtg tgc ata gtg gca gaa att 3108
Leu Phe Leu Leu Gly Leu Thr Ser Ser Val Cys Ile Val Ala Glu Ile
880 885 890

ata aag aag gtt gaa agg agc agg gaa aag atc cag aag cat gtt agt 3156
Ile Lys Lys Val Glu Arg Ser Arg Glu Lys Ile Gln Lys His Val Ser
895 900 905 910

tcg aca tca tca tct ttt ctt gaa gta tgatgcatat tgcattatatt 3203
Ser Thr Ser Ser Ser Phe Leu Glu Val
915

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cactatctat cttagataga tatatttttt tttattttta aatattgtac tatttatgg 3563
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35 40 45
Gly Leu Glu Ser Trp Ser Phe Phe Ala Val Tyr Asp Gly His Ala Gly
50 55 60
Ser Gln Val Ala Lys Tyr Cys Cys Glu His Leu Leu Asp His Ile Thr
65 70 75 80
Asn Asn Gln Asp Phe Lys Gly Ser Ala Gly Ala Pro Ser Val Glu Asn
85 90 95
Val Lys Asn Gly Ile Arg Thr Gly Phe Leu Glu Ile Asp Glu His Met
100 105 110

Arg	Val	Met	Ser	Glu	Lys	Lys	His	Gly	Ala	Asp	Arg	Ser	Gly	Ser	Thr
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Thr	Gln	Asp	His	Lys	Pro	Ser	Asn	Pro	Leu	Glu	Lys	Glu	Arg	Ile	Gln
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Asn	Ala	Gly	Gly	Ser	Val	Met	Ile	Gln	Arg	Val	Asn	Gly	Ser	Leu	Ala
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Arg	Leu	Glu	Val	Thr	Asp	Asp	Leu	Glu	Lys	Val	Cys	Asn	Glu	Val	Val
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Glu	Ala	Glu	Leu	Asp	Lys	Tyr	Leu	Glu	Cys	Arg	Val	Glu	Glu	Ile	Ile
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Ser	Lys	Arg	Asn	Val	Ile	Glu	Ala	Val	Tyr	Asn	Arg	Leu	Asn	Pro	Tyr
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<222> (444)..(1589)

<400> 136

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                Met Gly Ala Phe Leu Asp Lys Pro Lys Met
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gaa aag cat aat gcc cag ggg cag ggt aat ggg ttg cga tat ggg cta 521
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agc agc atg caa ggc tgg cgt gtt gaa atg gag gat gca cat acg gct 569
Ser Ser Met Gln Gly Trp Arg Val Glu Met Glu Asp Ala His Thr Ala
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gtg atc ggt ttg cca agt gga ctt gaa tcg tgg tca ttc ttt gct gtg 617
Val Ile Gly Leu Pro Ser Gly Leu Glu Ser Trp Ser Phe Phe Ala Val
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tat gat ggg cat gct ggt tct cag gtt gcc aaa tac tgc tgt gag cat 665
Tyr Asp Gly His Ala Gly Ser Gln Val Ala Lys Tyr Cys Cys Glu His
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ttg tta gat cac atc acc aat aac cag gat ttt aaa ggg tct gca gga 713
Leu Leu Asp His Ile Thr Asn Asn Gln Asp Phe Lys Gly Ser Ala Gly
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gca cct tct gtg gaa aat gta aag aat gga atc aga aca ggt ttt ctg 761
Ala Pro Ser Val Glu Asn Val Lys Asn Gly Ile Arg Thr Gly Phe Leu
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gag att gat gaa cac atg aga gtt atg tca gag aag aaa cat ggt gca 809
Glu Ile Asp Glu His Met Arg Val Met Ser Glu Lys Lys His Gly Ala
                110                   115                   120

gat aga agt ggg tca aca gct gta ggt gtc tta att tct ccc caa cat 857
Asp Arg Ser Gly Ser Thr Ala Val Gly Val Leu Ile Ser Pro Gln His
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act tat ttc att aac tgt gga gac tca aga ggt tta ctt tgt agg aac 905

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Arg	Lys	Val	His	Phe	Phe	Thr	Gln	Asp	His	Lys	Pro	Ser	Asn	Pro	Leu		
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Glu	Lys	Glu	Arg	Ile	Gln	Asn	Ala	Gly	Gly	Ser	Val	Met	Ile	Gln	Arg		
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gtg	aat	ggc	tct	ctg	gct	gta	tcg	agg	gcc	ctt	ggg	gat	ttt	gat	tac	1049	
Val	Asn	Gly	Ser	Leu	Ala	Val	Ser	Arg	Ala	Leu	Gly	Asp	Phe	Asp	Tyr		
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Lys	Cys	Val	His	Gly	Lys	Gly	Pro	Thr	Glu	Gln	Leu	Val	Ser	Pro	Glu		
		205					210					215					
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Pro	Glu	Val	His	Asp	Ile	Glu	Arg	Ser	Glu	Glu	Asp	Asp	Gln	Phe	Ile		
		220				225					230						
atc	ctt	gca	tgt	gat	ggg	atc	tgg	gat	gtt	atg	gga	aat	gaa	gag	ctc	1193	
Ile	Leu	Ala	Cys	Asp	Gly	Ile	Trp	Asp	Val	Met	Gly	Asn	Glu	Glu	Leu		
235					240					245					250		
tgt	gat	ttt	gta	aga	tcc	aga	ctt	gaa	gtc	act	gat	gac	ctt	gag	aaa	1241	
Cys	Asp	Phe	Val	Arg	Ser	Arg	Leu	Glu	Val	Thr	Asp	Asp	Leu	Glu	Lys		
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Arg	Val	Glu	Glu	Ile	Ile	Lys	Lys	Gln	Gly	Glu	Gly	Val	Pro	Asp	Leu		
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Val	His	Val	Met	Arg	Thr	Leu	Ala	Ser	Glu	Asn	Ile	Pro	Ser	Leu	Pro		
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Pro	Gly	Gly	Glu	Leu	Ala	Ser	Lys	Arg	Asn	Val	Ile	Glu	Ala	Val	Tyr		
			350					355					360				
aat	aga	ctg	aat	cct	tac	aaa	aat	gac	gac	act	gac	tct	aca	tca	aca	1577	
Asn	Arg	Leu	Asn	Pro	Tyr	Lys	Asn	Asp	Asp	Thr	Asp	Ser	Thr	Ser	Thr		

365

370

375

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Asp Asp Met Trp
380

aaaggagagt acagctcaac tttgttgaaa cttttaacat ccaccccaa ctttaaggaa 1689
ggggatatga catgggtgag aatgattaca tcagagaact tcagcagtac aacagctagc 1749
ccagaactga tttttttttt ttttttgtaa atttgagact tatgtaagcg tgatttcaaa 1809
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35 40 45
Thr Leu Phe Val Asn Gly Gln Pro Arg Pro Leu Glu Ser Ser Gln Val
50 55 60
Lys Tyr Leu Arg Arg Glu Leu Ile Glu Leu Arg Asn Lys Val Asn Arg
65 70 75 80
Leu Leu Asp Ser Leu Glu Pro Pro Gly Glu Pro Gly Pro Ser Thr Asn

85										90					95				
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Asp	Ser	Ser	Gly	Lys	Gln	Ser	Thr	Gln	Val	Met	Ala	Ala	Ser	Met	Ser				
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Ala	Phe	Asp	Pro	Leu	Lys	Asn	Gln	Asp	Glu	Ile	Asn	Lys	Asn	Val	Met				
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Ser	Ala	Phe	Gly	Leu	Thr	Asp	Asp	Gln	Val	Ser	Gly	Pro	Pro	Ser	Ala				
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Ser	Ala	Ala	His	Pro	Pro	Gly	Val	Gln	Pro	Gln	Gln	Pro	Pro	Tyr	Thr				
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Gly	Ala	Gln	Thr	Gln	Ala	Gly	Gln	Met	Tyr	Gln	Gln	Tyr	Gln	Gln	Gln				
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Gln	Tyr	Gly	Ile	Gln	Tyr	Ser	Ala	Ser	Tyr	Ser	Gln	Gln	Thr	Gly	Pro				
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Pro	Gly	Met	Ala	Pro	Ser	Gln	Pro	Gly	Ala	Tyr	Gln	Pro	Arg	Pro	Gly				
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Phe	Thr	Ser	Leu	Pro	Gly	Ser	Thr	Met	Thr	Pro	Pro	Pro	Ser	Gly	Pro				
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Asn	Pro	Tyr	Ala	Arg	Asn	Arg	Pro	Pro	Phe	Gly	Gln	Gly	Tyr	Thr	Gln				
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<222> (11)..(1084)

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gat gaa gta aca ata aag tat aaa gat gaa gat gga gat ctt ata aca      97
Asp Glu Val Thr Ile Lys Tyr Lys Asp Glu Asp Gly Asp Leu Ile Thr
      15              20              25

att ttt gat agt tct gac ctt tcc ttt gca att cag tgc agt agg ata      145
Ile Phe Asp Ser Ser Asp Leu Ser Phe Ala Ile Gln Cys Ser Arg Ile
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ctg aaa ctg aca tta ttt gtt aat ggc cag cca aga ccc ctt gaa tca      193
Leu Lys Leu Thr Leu Phe Val Asn Gly Gln Pro Arg Pro Leu Glu Ser
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agt cag gtg aaa tat ctc cgt cga gaa ctg ata gaa ctt cga aat aaa      241
Ser Gln Val Lys Tyr Leu Arg Arg Glu Leu Ile Glu Leu Arg Asn Lys
              65              70              75

gtg aat cgt tta ttg gat agc ttg gaa cca cct gga gaa cca gga cct      289
Val Asn Arg Leu Leu Asp Ser Leu Glu Pro Pro Gly Glu Pro Gly Pro
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Ser Thr Asn Ile Pro Glu Asn Asp Thr Val Asp Gly Arg Glu Glu Lys
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aat gtt atg tca gcg ttt ggc tta aca gat gat cag gtt tca ggg cca      481
Asn Val Met Ser Ala Phe Gly Leu Thr Asp Asp Gln Val Ser Gly Pro
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ccc agt gct cct gca gaa gat cgt tca gga aca ccc gac agc att gct      529
Pro Ser Ala Pro Ala Glu Asp Arg Ser Gly Thr Pro Asp Ser Ile Ala
              160              165              170

tcc tcc tcc tca gca gct cac cca cca ggc gtt cag cca cag cag cca      577
Ser Ser Ser Ser Ala Ala His Pro Pro Gly Val Gln Pro Gln Gln Pro
      175              180              185

cca tat aca gga gct cag act caa gca ggt cag atg tac caa cag tac      625
Pro Tyr Thr Gly Ala Gln Thr Gln Ala Gly Gln Met Tyr Gln Gln Tyr

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210		215	220	
cag cct caa cag tat ggt att cag tat tca gca agc tat agt cag cag				721
Gln Pro Gln Gln Tyr Gly Ile Gln Tyr Ser Ala Ser Tyr Ser Gln Gln				
225		230	235	
act gga ccc caa caa cct cag cag ttc cag gga tat ggc cag caa cca				769
Thr Gly Pro Gln Gln Pro Gln Gln Phe Gln Gly Tyr Gly Gln Gln Pro				
240		245	250	
act tcc cag gca cca gct cct gcc ttt tct ggt cag cct caa caa ctg				817
Thr Ser Gln Ala Pro Ala Pro Ala Phe Ser Gly Gln Pro Gln Gln Leu				
255		260	265	
cct gct cag ccg cca cag cag tac cag gcg agc aat tat cct gca caa				865
Pro Ala Gln Pro Pro Gln Gln Tyr Gln Ala Ser Asn Tyr Pro Ala Gln				
270		275	280	285
act tac act gcc caa act tct cag cct act aat tat act gtg gct cct				913
Thr Tyr Thr Ala Gln Thr Ser Gln Pro Thr Asn Tyr Thr Val Ala Pro				
290		295	300	
gcc tct caa cct gga atg gct cca agc caa cct ggg gcc tat caa cca				961
Ala Ser Gln Pro Gly Met Ala Pro Ser Gln Pro Gly Ala Tyr Gln Pro				
305		310	315	
aga cca ggt ttt act tca ctt cct gga agt acc atg acc cct cct cca				1009
Arg Pro Gly Phe Thr Ser Leu Pro Gly Ser Thr Met Thr Pro Pro Pro				
320		325	330	
agt ggg cct aat cct tat gcg cgt aac cgt cct ccc ttt ggt cag ggc				1057
Ser Gly Pro Asn Pro Tyr Ala Arg Asn Arg Pro Pro Phe Gly Gln Gly				
335		340	345	
tat acc caa cct gga cct ggt tat cga taaggaggct cctctacacc				1104
Tyr Thr Gln Pro Gly Pro Gly Tyr Arg				
350		355		
aattaatgta gctgctagct attggcctcc caaaagactc cagtactatt ttaatttgta				1164
ttgaagaagt tcagaaattt aaaagcagag catttttttat gatatacttg ttggtgttaa				1224
ttgaaagtat aatttgctgg aacacaaaga ccaaaatgaa agttttttcc tccctgctta				1284
aaaatgtagc agcttcttag ttacttttga acactactct tacatgtata aagtgattga				1344
cttgactttc tagcttccct tgtccggagg atattaaaat gctagggtga ggttttagcca				1404
tcttacttgg ctttttacta ttaacatgat gtactaaagt agagcccttt gagaatacaa				1464
gatattatgt ataaaatgta aactgatga taggttaata aagatgattg aatcc				1519

<210> 139
 <211> 396
 <212> PRT
 <213> Homo sapiens

<400> 139

Met	Asn	Gly	Gln	Leu	Asp	Leu	Ser	Gly	Lys	Leu	Ile	Val	Lys	Ala	Gln
1				5					10					15	
Leu	Gly	Glu	Asp	Ile	Arg	Arg	Ile	Pro	Ile	His	Asn	Glu	Asp	Ile	Thr
			20					25					30		
Tyr	Asp	Glu	Leu	Val	Leu	Met	Met	Gln	Arg	Val	Phe	Arg	Gly	Lys	Leu
	35						40					45			
Leu	Ser	Asn	Asp	Glu	Val	Thr	Ile	Lys	Tyr	Lys	Asp	Glu	Asp	Gly	Asp
	50						55				60				
Leu	Ile	Thr	Ile	Phe	Asp	Ser	Ser	Asp	Leu	Ser	Phe	Ala	Ile	Gln	Cys
	65				70					75					80
Ser	Arg	Ile	Leu	Lys	Leu	Thr	Leu	Phe	Val	Asn	Gly	Gln	Pro	Arg	Pro
				85					90					95	
Leu	Glu	Ser	Ser	Gln	Val	Lys	Tyr	Leu	Arg	Arg	Glu	Leu	Ile	Glu	Leu
			100					105					110		
Arg	Asn	Lys	Val	Asn	Arg	Leu	Leu	Asp	Ser	Leu	Glu	Pro	Pro	Gly	Glu
		115					120					125			
Pro	Gly	Pro	Ser	Thr	Asn	Ile	Pro	Glu	Asn	Asp	Thr	Val	Asp	Gly	Arg
	130					135					140				
Glu	Glu	Lys	Ser	Ala	Ser	Asp	Ser	Ser	Gly	Lys	Gln	Ser	Thr	Gln	Val
	145				150					155					160
Met	Ala	Ala	Ser	Met	Ser	Ala	Phe	Asp	Pro	Leu	Lys	Asn	Gln	Asp	Glu
				165					170					175	
Ile	Asn	Lys	Asn	Val	Met	Ser	Ala	Phe	Gly	Leu	Thr	Asp	Asp	Gln	Val
			180						185					190	
Ser	Gly	Pro	Pro	Ser	Ala	Pro	Ala	Glu	Asp	Arg	Ser	Gly	Thr	Pro	Asp
		195				200						205			
Ser	Ile	Ala	Ser	Ser	Ser	Ser	Ala	Ala	His	Pro	Pro	Gly	Val	Gln	Pro
	210					215					220				
Gln	Gln	Pro	Pro	Tyr	Thr	Gly	Ala	Gln	Thr	Gln	Ala	Gly	Gln	Met	Tyr
	225				230					235				240	
Gln	Gln	Tyr	Gln	Gln	Gln	Ala	Gly	Tyr	Gly	Ala	Gln	Gln	Pro	Gln	Ala
			245						250					255	
Pro	Pro	Gln	Gln	Pro	Gln	Gln	Tyr	Gly	Ile	Gln	Tyr	Ser	Ala	Ser	Tyr
		260						265					270		

1002-4291 000000

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<210> 140
<211> 1641
<212> DNA
<213> Homo sapiens
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<220>  
<221> CDS  
<222> (19) .. (1206)
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<400>	140															51
aacatccttg	agtcacc	atg	aac	gga	cag	ttg	gat	cta	agt	ggg	aag	cta				
		Met	Asn	Gly	Gln	Leu	Asp	Leu	Ser	Gly	Lys	Leu				
		1					5				10					
atc	gtc	aaa	gct	caa	ctt	ggg	gag	gat	att	cgg	cga	att	cct	att	cat	99
Ile	Val	Lys	Ala	Gln	Leu	Gly	Glu	Asp	Ile	Arg	Arg	Ile	Pro	Ile	His	
			15					20					25			
aat	gaa	gat	att	act	tat	gat	gaa	tta	gtg	cta	atg	atg	caa	cga	gtt	147
Asn	Glu	Asp	Ile	Thr	Tyr	Asp	Glu	Leu	Val	Leu	Met	Met	Gln	Arg	Val	
		30					35					40				
ttc	aga	gga	aaa	ctt	ctg	agt	aat	gat	gaa	gta	aca	ata	aag	tat	aaa	195
Phe	Arg	Gly	Lys	Leu	Leu	Ser	Asn	Asp	Glu	Val	Thr	Ile	Lys	Tyr	Lys	
	45					50					55					
gat	gaa	gat	gga	gat	ctt	ata	aca	att	ttt	gat	agt	tct	gac	ctt	tcc	243
Asp	Glu	Asp	Gly	Asp	Leu	Ile	Thr	Ile	Phe	Asp	Ser	Ser	Asp	Leu	Ser	
60					65					70					75	
ttt	gca	att	cag	tgc	agt	agg	ata	ctg	aaa	ctg	aca	tta	ttt	gtt	aat	291
Phe	Ala	Ile	Gln	Cys	Ser	Arg	Ile	Leu	Lys	Leu	Thr	Leu	Phe	Val	Asn	

80	85	90	
ggc cag cca aga ccc ctt gaa tca agt cag gtg aaa tat ctc cgt cga			339
Gly Gln Pro Arg Pro Leu Glu Ser Ser Gln Val Lys Tyr Leu Arg Arg			
95	100	105	
gaa ctg ata gaa ctt cga aat aaa gtg aat cgt tta ttg gat agc ttg			387
Glu Leu Ile Glu Leu Arg Asn Lys Val Asn Arg Leu Leu Asp Ser Leu			
110	115	120	
gaa cca cct gga gaa cca gga cct tcc acc aat att cct gaa aat gat			435
Glu Pro Pro Gly Glu Pro Gly Pro Ser Thr Asn Ile Pro Glu Asn Asp			
125	130	135	
act gtg gat ggt agg gaa gaa aag tct gct tct gat tct tct gga aaa			483
Thr Val Asp Gly Arg Glu Glu Lys Ser Ala Ser Asp Ser Ser Gly Lys			
140	145	150	155
cag tct act cag gtt atg gca gca agt atg tct gct ttt gat cct tta			531
Gln Ser Thr Gln Val Met Ala Ala Ser Met Ser Ala Phe Asp Pro Leu			
160	165	170	
aaa aac caa gat gaa atc aat aaa aat gtt atg tca gcg ttt ggc tta			579
Lys Asn Gln Asp Glu Ile Asn Lys Asn Val Met Ser Ala Phe Gly Leu			
175	180	185	
aca gat gat cag gtt tca ggg cca ccc agt gct cct gca gaa gat cgt			627
Thr Asp Asp Gln Val Ser Gly Pro Pro Ser Ala Pro Ala Glu Asp Arg			
190	195	200	
tca gga aca ccc gac agc att gct tcc tcc tcc tca gca gct cac cca			675
Ser Gly Thr Pro Asp Ser Ile Ala Ser Ser Ser Ser Ala Ala His Pro			
205	210	215	
cca ggc gtt cag cca cag cag cca cca tat aca gga gct cag act caa			723
Pro Gly Val Gln Pro Gln Gln Pro Pro Tyr Thr Gly Ala Gln Thr Gln			
220	225	230	235
gca ggt cag atg tac caa cag tac cag caa cag gcc ggc tat ggt gca			771
Ala Gly Gln Met Tyr Gln Gln Tyr Gln Gln Gln Ala Gly Tyr Gly Ala			
240	245	250	
cag cag ccg cag gct cca cct cag cag cct caa cag tat ggt att cag			819
Gln Gln Pro Gln Ala Pro Pro Gln Gln Pro Gln Gln Tyr Gly Ile Gln			
255	260	265	
tat tca gca agc tat agt cag cag act gga ccc caa caa cct cag cag			867
Tyr Ser Ala Ser Tyr Ser Gln Gln Thr Gly Pro Gln Gln Pro Gln Gln			
270	275	280	
ttc cag gga tat ggc cag caa cca act tcc cag gca cca gct cct gcc			915
Phe Gln Gly Tyr Gly Gln Gln Pro Thr Ser Gln Ala Pro Ala Pro Ala			
285	290	295	
ttt tct ggt cag cct caa caa ctg cct gct cag ccg cca cag cag tac			963
Phe Ser Gly Gln Pro Gln Gln Leu Pro Ala Gln Pro Pro Gln Gln Tyr			
300	305	310	315

cag gcg agc aat tat cct gca caa act tac act gcc caa act tct cag 1011
Gln Ala Ser Asn Tyr Pro Ala Gln Thr Tyr Thr Ala Gln Thr Ser Gln
320 325 330

cct act aat tat act gtg gct cct gcc tct caa cct gga atg gct cca 1059
Pro Thr Asn Tyr Thr Val Ala Pro Ala Ser Gln Pro Gly Met Ala Pro
335 340 345

agc caa cct ggg gcc tat caa cca aga cca ggt ttt act tca ctt cct 1107
Ser Gln Pro Gly Ala Tyr Gln Pro Arg Pro Gly Phe Thr Ser Leu Pro
350 355 360

gga agt acc atg acc cct cct cca agt ggg cct aat cct tat gcg cgt 1155
Gly Ser Thr Met Thr Pro Pro Pro Ser Gly Pro Asn Pro Tyr Ala Arg
365 370 375

aac cgt cct ccc ttt ggt cag ggc tat acc caa cct gga cct ggt tat 1203
Asn Arg Pro Pro Phe Gly Gln Gly Tyr Thr Gln Pro Gly Pro Gly Tyr
380 385 390 395

cga taaggaggct cctctacacc aattaatgta gctgctagct attggcctcc 1256
Arg

caaaagactc cagtactatt ttaatttgta ttgaagaagt tcagaaattht aaaagcagag 1316

catttttttat gatatacttg ttggtgttaa ttgaaagtat aatttgctgg aacacaaaga 1376

ccaaaatgaa agtttttttcc tccctgctta aaaatgtagc agcttcttag ttacttttga 1436

acactactct tacatgtata aagtgtattga cttgactttc tagcttccct tgtccggagg 1496

atattaaaat gctagggtga gggttagcca tcttacttgg ctttttacta ttaacatgat 1556

gtactaaagt agagcccttt gagaatacaa gatattatgt ataaaatgta aactgatga 1616

taggttaata aagatgattg aatcc 1641

<210> 141

<211> 323

<212> PRT

<213> Homo sapiens

<400> 141

Met Ala Phe Ser Gly Ser Gln Ala Pro Tyr Leu Ser Pro Ala Val Pro
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Phe Ser Gly Thr Ile Gln Gly Gly Leu Gln Asp Gly Leu Gln Ile Thr
20 25 30

Val Asn Gly Thr Val Leu Ser Ser Gly Thr Arg Phe Ala Val Asn
35 40 45

Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile Ala Phe His Phe Asn Pro
50 55 60

Arg Phe Glu Asp Gly Gly Tyr Val Val Cys Asn Thr Arg Gln Asn Gly
 65 70 75 80
 Ser Trp Gly Pro Glu Glu Arg Lys Thr His Met Pro Phe Gln Lys Gly
 85 90 95
 Met Pro Phe Asp Leu Cys Phe Leu Val Gln Ser Ser Asp Phe Lys Val
 100 105 110
 Met Val Asn Gly Ile Leu Phe Val Gln Tyr Phe His Arg Val Pro Phe
 115 120 125
 His Arg Val Asp Thr Ile Ser Val Asn Gly Ser Val Gln Leu Ser Tyr
 130 135 140
 Ile Ser Phe Gln Pro Pro Gly Val Trp Pro Ala Asn Pro Ala Pro Ile
 145 150 155 160
 Thr Gln Thr Val Ile His Thr Val Gln Ser Ala Pro Gly Gln Met Phe
 165 170 175
 Ser Thr Pro Ala Ile Pro Pro Met Met Tyr Pro His Pro Ala Tyr Pro
 180 185 190
 Met Pro Phe Ile Thr Thr Ile Leu Gly Gly Leu Tyr Pro Ser Lys Ser
 195 200 205
 Ile Leu Leu Ser Gly Thr Val Leu Pro Ser Ala Gln Arg Phe His Ile
 210 215 220
 Asn Leu Cys Ser Gly Asn His Ile Ala Phe His Leu Asn Pro Arg Phe
 225 230 235 240
 Asp Glu Asn Ala Val Val Arg Asn Thr Gln Ile Asp Asn Ser Trp Gly
 245 250 255
 Ser Glu Glu Arg Ser Leu Pro Arg Lys Met Pro Phe Val Arg Gly Gln
 260 265 270
 Ser Phe Ser Val Trp Ile Leu Cys Glu Ala His Cys Leu Lys Val Ala
 275 280 285
 Val Asp Gly Gln His Leu Phe Glu Tyr Tyr His Arg Leu Arg Asn Leu
 290 295 300
 Pro Thr Ile Asn Arg Leu Glu Val Gly Gly Asp Ile Gln Leu Thr His
 305 310 315 320
 Val Gln Thr

<210> 142

<211> 1616

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (72)..(1040)

<400> 142

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gcggcgggaga g atg gcc ttc agc ggt tcc cag gct ccc tac ctg agt cca 110
Met Ala Phe Ser Gly Ser Gln Ala Pro Tyr Leu Ser Pro
1 5 10

gct gtc ccc ttt tct ggg act att caa gga ggt ctc cag gac gga ctt 158
Ala Val Pro Phe Ser Gly Thr Ile Gln Gly Gly Leu Gln Asp Gly Leu
15 20 25

cag atc act gtc aat ggg acc gtt ctc agc tcc agt gga acc agg ttt 206
Gln Ile Thr Val Asn Gly Thr Val Leu Ser Ser Ser Gly Thr Arg Phe
30 35 40 45

gct gtg aac ttt cag act ggc ttc agt gga aat gac att gcc ttc cac 254
Ala Val Asn Phe Gln Thr Gly Phe Ser Gly Asn Asp Ile Ala Phe His
50 55 60

ttc aac cct cgg ttt gaa gat gga ggg tac gtg gtg tgc aac acg agg 302
Phe Asn Pro Arg Phe Glu Asp Gly Gly Tyr Val Val Cys Asn Thr Arg
65 70 75

cag aac gga agc tgg ggg ccc gag gag agg aag aca cac atg cct ttc 350
Gln Asn Gly Ser Trp Gly Pro Glu Glu Arg Lys Thr His Met Pro Phe
80 85 90

cag aag ggg atg ccc ttt gac ctc tgc ttc ctg gtg cag agc tca gat 398
Gln Lys Gly Met Pro Phe Asp Leu Cys Phe Leu Val Gln Ser Ser Asp
95 100 105

ttc aag gtg atg gtg aac ggg atc ctc ttc gtg cag tac ttc cac cgc 446
Phe Lys Val Met Val Asn Gly Ile Leu Phe Val Gln Tyr Phe His Arg
110 115 120 125

gtg ccc ttc cac cgt gtg gac acc atc tcc gtc aat ggc tct gtg cag 494
Val Pro Phe His Arg Val Asp Thr Ile Ser Val Asn Gly Ser Val Gln
130 135 140

ctg tcc tac atc agc ttc cag cct ccc ggc gtg tgg cct gcc aac ccg 542
Leu Ser Tyr Ile Ser Phe Gln Pro Pro Gly Val Trp Pro Ala Asn Pro
145 150 155

gct ccc att acc cag aca gtc atc cac aca gtg cag agc gcc cct gga 590
Ala Pro Ile Thr Gln Thr Val Ile His Thr Val Gln Ser Ala Pro Gly
160 165 170

cag atg ttc tct act ccc gcc atc cca cct atg atg tac ccc cac ccc 638
Gln Met Phe Ser Thr Pro Ala Ile Pro Pro Met Met Tyr Pro His Pro
175 180 185

gcc tat ccg atg cct ttc atc acc acc att ctg gga ggg ctg tac cca 686
Ala Tyr Pro Met Pro Phe Ile Thr Thr Ile Leu Gly Gly Leu Tyr Pro

$\langle 210 \rangle$	143
$\langle 211 \rangle$	136

<212> PRT

<213> Homo sapiens

<400> 143

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Met Ala Gly Ala Ile Ile Glu Asn Met Ser Thr Lys Lys Leu Cys Ile
  1             5             10             15

Val Gly Gly Ile Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly
      20             25             30

Gly Leu Ile Ala Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val
      35             40             45

Lys Cys Val Asp Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val
      50             55             60

Pro Trp Gly Pro Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala
      65             70             75             80

Ile Pro Arg Glu Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile
      85             90             95

Pro Leu Pro His Met Ala Leu Ser Cys Gly Phe Leu Asp Gln Arg His
      100            105            110

Gly His Leu Ser Val Cys Leu Leu Thr Val Ala Phe Gly Gly Arg Phe
      115            120            125

Leu Gln Pro Leu Met His Cys Val
      130            135

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<210> 144

<211> 1252

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (225)..(632)

<400> 144

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acaatcacag ctccgggcat tgggggaacc cgagccggct gcgccggggg aatccgtgcg 60
ggcgccttcc gtcccggtcc catcctcgcc gcgctccagc acctctgaag ttttgcagcg 120
cccagaaagg aggcgaggaa ggagggagtg tgtgagagga gggagcaaaa agctcacct 180
aaaacattta tttcaaggag aaaagaaaaa gggggggcgc aaaa atg gct ggg gca 236
                                     Met Ala Gly Ala
                                     1

att ata gaa aac atg agc acc aag aag ctg tgc att gtt ggt ggg att 284
Ile Ile Glu Asn Met Ser Thr Lys Lys Leu Cys Ile Val Gly Gly Ile
  5             10             15             20

ctg ctc gtg ttc caa atc atc gcc ttt ctg gtg gga ggc ttg att gct 332

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Leu Leu Val Phe Gln Ile Ile Ala Phe Leu Val Gly Gly Leu Ile Ala
 25 30 35
 cca ggg ccc aca acg gca gtg tcc tac atg tcg gtg aaa tgt gtg gat 380
 Pro Gly Pro Thr Thr Ala Val Ser Tyr Met Ser Val Lys Cys Val Asp
 40 45 50
 gcc cgt aag aac cat cac aag aca aaa tgg ttc gtg cct tgg gga ccc 428
 Ala Arg Lys Asn His His Lys Thr Lys Trp Phe Val Pro Trp Gly Pro
 55 60 65
 aat cat tgt gac aag atc cga gac att gaa gag gca att cca agg gaa 476
 Asn His Cys Asp Lys Ile Arg Asp Ile Glu Glu Ala Ile Pro Arg Glu
 70 75 80
 att gaa gcc aat gac atc gtg ttt tct gtt cac att ccc ctc ccc cac 524
 Ile Glu Ala Asn Asp Ile Val Phe Ser Val His Ile Pro Leu Pro His
 85 90 95 100
 atg gct ctt agc tgt ggt ttc ttg gac cag cgg cat gga cat ttg tca 572
 Met Ala Leu Ser Cys Gly Phe Leu Asp Gln Arg His Gly His Leu Ser
 105 110 115
 gtt tgc ctt ctg acg gta gct ttt gga gga aga ttc ctg cag cca cta 620
 Val Cys Leu Leu Thr Val Ala Phe Gly Gly Arg Phe Leu Gln Pro Leu
 120 125 130
 atg cat tgt gta tgataacaaa aactctggta tgacacattt tctgtgatca 672
 Met His Cys Val
 135
 ttgttaatta gtgacatagt aacatctgta gcagctgggt agtaaacctc atgtgggggt 732
 ggggtggggg tgtattcctt ggggatgggt ttgggccgaa tggggagtgg aatatttgac 792
 atttttcctg ttttaaattc taggatagat tttaacatcc tttgcgggtcc cagtccaagg 852
 taggctgggtg tcatagtctt ctcaactccta atccatgacc actgtttttt tcctatttat 912
 atcaccaggt agcctactga gttaatatatt aagttgtcaa tagataagtg tcctgtttt 972
 gtggcataat ataactgaat ttcatgagaa gattttattcc accaggggta tttcagcttt 1032
 gaaaccaaat ctgtgtatct aatactaacc aatctgttgg atgtggggtt taaaaaatgt 1092
 ttgctaaact acccaagtaa gatttactgt attaaatggc cttcgggtct gaaaagcttt 1152
 tttaacctct tgcttaaaat gcgttttatt ttgataagat acttcaaata gcctccaaaa 1212
 gtgtagatcc aatcacttaa ataaacctgt atgtatatgc 1252

 <210> 145
 <211> 468
 <212> PRT
 <213> Homo sapiens

<400> 145

Met	Pro	Val	Arg	Thr	Ile	Thr	Arg	Gln	Asn	Gly	Ser	Cys	Leu	Gly	Asp
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Pro	Ile	Ile	Val	Thr	Arg	Ser	Glu	Thr	Leu	Lys	Arg	Gln	Phe	Gln	Phe
			20					25					30		
Met	Leu	Phe	Ile	Leu	Gln	Leu	Asp	Ile	Ala	Phe	Lys	Leu	Asn	Asn	Gln
		35					40					45			
Ile	Arg	Glu	Asn	Ala	Glu	Val	Ser	Met	Asp	Val	Ser	Leu	Ala	Tyr	Arg
	50					55					60				
Asp	Asp	Ala	Phe	Ala	Glu	Trp	Thr	Glu	Met	Ala	His	Glu	Arg	Val	Pro
65					70					75					80
Arg	Lys	Leu	Lys	Cys	Thr	Phe	Thr	Ser	Pro	Lys	Thr	Pro	Glu	His	Glu
				85					90					95	
Gly	Arg	Tyr	Tyr	Glu	Cys	Asp	Val	Leu	Pro	Phe	Met	Glu	Ile	Gly	Ser
			100					105					110		
Val	Ala	His	Lys	Phe	Tyr	Leu	Leu	Asn	Ile	Arg	Leu	Pro	Val	Asn	Glu
		115					120					125			
Lys	Lys	Lys	Ile	Asn	Val	Gly	Ile	Gly	Glu	Ile	Lys	Asp	Ile	Arg	Leu
	130					135					140				
Val	Gly	Ile	His	Gln	Asn	Gly	Gly	Phe	Thr	Lys	Val	Trp	Phe	Ala	Met
145					150					155					160
Lys	Thr	Phe	Leu	Thr	Pro	Ser	Ile	Phe	Ile	Ile	Met	Val	Trp	Tyr	Trp
				165					170					175	
Arg	Arg	Ile	Thr	Met	Met	Ser	Arg	Pro	Pro	Val	Leu	Leu	Glu	Lys	Val
			180					185					190		
Ile	Phe	Ala	Leu	Gly	Ile	Ser	Met	Thr	Phe	Ile	Asn	Ile	Pro	Val	Glu
		195					200					205			
Trp	Phe	Ser	Ile	Gly	Phe	Asp	Trp	Thr	Trp	Met	Leu	Leu	Phe	Gly	Asp
	210					215					220				
Ile	Arg	Gln	Gly	Ile	Phe	Tyr	Ala	Met	Leu	Leu	Ser	Phe	Trp	Ile	Ile
225					230					235					240
Phe	Cys	Gly	Glu	His	Met	Met	Asp	Gln	His	Glu	Arg	Asn	His	Ile	Ala
				245					250					255	
Gly	Tyr	Trp	Lys	Gln	Val	Gly	Pro	Ile	Ala	Val	Gly	Ser	Phe	Cys	Leu
			260					265					270		
Phe	Ile	Phe	Asp	Met	Cys	Glu	Arg	Gly	Val	Gln	Leu	Thr	Asn	Pro	Phe
		275					280					285			
Tyr	Ser	Ile	Trp	Thr	Thr	Asp	Ile	Gly	Thr	Glu	Leu	Ala	Met	Ala	Phe
	290					295					300				

Ile Ile Val Ala Gly Ile Cys Leu Cys Leu Tyr Phe Leu Phe Leu Cys
 305 310 315 320

Phe Met Val Phe Gln Val Phe Arg Asn Ile Ser Gly Lys Gln Ser Ser
 325 330 335

Leu Pro Ala Met Ser Lys Val Arg Arg Leu His Tyr Glu Gly Leu Ile
 340 345 350

Phe Arg Phe Lys Phe Leu Met Leu Ile Thr Leu Ala Cys Ala Ala Met
 355 360 365

Thr Val Ile Phe Phe Ile Val Ser Gln Val Thr Glu Gly His Trp Lys
 370 375 380

Trp Gly Gly Val Thr Val Gln Val Asn Ser Ala Phe Phe Thr Gly Ile
 385 390 395 400

Tyr Gly Met Trp Asn Leu Tyr Val Phe Ala Leu Met Phe Leu Tyr Ala
 405 410 415

Pro Ser His Lys Asn Tyr Gly Glu Asp Gln Ser Asn Gly Met Gln Leu
 420 425 430

Pro Cys Lys Ser Arg Glu Asp Cys Ala Leu Phe Val Ser Glu Leu Tyr
 435 440 445

Gln Glu Leu Phe Ser Ala Ser Lys Tyr Ser Phe Ile Asn Asp Asn Ala
 450 455 460

Ala Ser Gly Ile
 465

<210> 146
 <211> 1943
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 <213> Homo sapiens

<220>
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tg	tc	gc	gt	gaa	at	gt	gt	gg	atg	ccc	gta	aga	acc	atc	aca	aga	caa	aat	ggt	411
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Ser	Cys	Leu	Gly	Asp	Pro	Ile	Ile	Val	Thr	Arg	Ser	Glu	Thr	Leu	Lys					
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agg	caa	ttc	caa	ttc	atg	ctg	ttt	atc	ctg	cag	ctg	gac	att	gcc	ttc					507
Arg	Gln	Phe	Gln	Phe	Met	Leu	Phe	Ile	Leu	Gln	Leu	Asp	Ile	Ala	Phe					
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Lys	Leu	Asn	Asn	Gln	Ile	Arg	Glu	Asn	Ala	Glu	Val	Ser	Met	Asp	Val					
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tcc	ctg	gct	tac	cgt	gat	gac	gcg	ttt	gct	gag	tgg	act	gaa	atg	gcc					603
Ser	Leu	Ala	Tyr	Arg	Asp	Asp	Ala	Phe	Ala	Glu	Trp	Thr	Glu	Met	Ala					
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His	Glu	Arg	Val	Pro	Arg	Lys	Leu	Lys	Cys	Thr	Phe	Thr	Ser	Pro	Lys					
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Thr	Pro	Glu	His	Glu	Gly	Arg	Tyr	Tyr	Glu	Cys	Asp	Val	Leu	Pro	Phe					
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atg	gaa	att	ggg	tct	gtg	gcc	cat	aag	ttt	tac	ctt	tta	aac	atc	cgg					747
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Leu	Pro	Val	Asn	Glu	Lys	Lys	Lys	Ile	Asn	Val	Gly	Ile	Gly	Glu	Ile					
	125				130					135										
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Lys	Asp	Ile	Arg	Leu	Val	Gly	Ile	His	Gln	Asn	Gly	Gly	Phe	Thr	Lys					
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Val	Trp	Phe	Ala	Met	Lys	Thr	Phe	Leu	Thr	Pro	Ser	Ile	Phe	Ile	Ile					
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Met	Val	Trp	Tyr	Trp	Arg	Arg	Ile	Thr	Met	Met	Ser</									

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Arg	Asn	His	Ile	Ala	Gly	Tyr	Trp	Lys	Gln	Val	Gly	Pro	Ile	Ala	Val	
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Phe	Leu	Phe	Leu	Cys	Phe	Met	Val	Phe	Gln	Val	Phe	Arg	Asn	Ile	Ser	
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ggg	aag	cag	tcc	agc	ctg	cca	gct	atg	agc	aaa	gtc	cgg	cgg	cta	cac	1419
Gly	Lys	Gln	Ser	Ser	Leu	Pro	Ala	Met	Ser	Lys	Val	Arg	Arg	Leu	His	
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tat	gag	ggg	cta	att	ttt	agg	ttc	aag	ttc	ctc	atg	ctt	atc	acc	ttg	1467
Tyr	Glu	Gly	Leu	Ile	Phe	Arg	Phe	Lys	Phe	Leu	Met	Leu	Ile	Thr	Leu	
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gcc	tgc	gct	gcc	atg	act	gtc	atc	ttc	ttc	atc	gtt	agt	cag	gta	acg	1515
Ala	Cys	Ala	Ala	Met	Thr	Val	Ile	Phe	Phe	Ile	Val	Ser	Gln	Val	Thr	
	365					370					375					
gaa	ggc	cat	tgg	aaa	tgg	ggc	ggc	gtc	aca	gtc	caa	gtg	aac	agt	gcc	1563
Glu	Gly	His	Trp	Lys	Trp	Gly	Gly	Val	Thr	Val	Gln	Val	Asn	Ser	Ala	
380					385					390					395	
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Phe	Phe	Thr	Gly	Ile	Tyr	Gly	Met	Trp	Asn	Leu	Tyr	Val	Phe	Ala	Leu	
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Asn	Gly	Met	Gln	Leu	Pro	Cys	Lys	Ser	Arg	Glu	Asp	Cys	Ala	Leu	Phe	
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Val	Ser	Glu	Leu	Tyr	Gln	Glu	Leu	Phe	Ser	Ala	Ser	Lys	Tyr	Ser	Phe	

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 35 40 45
 Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala Phe Ala Glu Trp Thr
 50 55 60
 Glu Met Ala His Glu Arg Val Pro Arg Lys Leu Lys Cys Thr Phe Thr
 65 70 75 80
 Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr Tyr Glu Cys Asp Val
 85 90 95
 Leu Pro Phe Met Glu Ile Gly Ser Val Ala His Lys Phe Tyr Leu Leu
 100 105 110
 Asn Ile Arg Leu Pro Val Asn Glu Lys Lys Lys Ile Asn Val Gly Ile
 115 120 125
 Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile His Gln Asn Gly Gly
 130 135 140
 Phe Thr Lys Val Trp Phe Ala Met Lys Thr Phe Leu Thr Pro Ser Ile
 145 150 155 160
 Phe Ile Ile Met Val Trp Tyr Trp Arg Arg Ile Thr Met Met Ser Arg
 165 170 175
 Pro Pro Val Leu Leu Glu Lys Val Ile Phe Ala Leu Gly Ile Ser Met
 180 185 190
 Thr Phe Ile Asn Ile Pro Val Glu Trp Phe Ser Ile Gly Phe Asp Trp
 195 200 205

Thr Trp Met Leu Leu Phe Gly Asp Ile Arg Gln Gly Ile Phe Tyr Ala
 210 215 220

Met Leu Leu Ser Phe Trp Ile Ile Phe Cys Gly Glu His Met Met Asp
 225 230 235 240

Gln His Glu Arg Asn His Ile Ala Gly Tyr Trp Lys Gln Val Gly Pro
 245 250 255

Ile Ala Val Gly Ser Phe Cys Leu Phe Ile Phe Asp Met Cys Glu Arg
 260 265 270

Gly Val Gln Leu Thr Asn Pro Phe Tyr Ser Ile Trp Thr Thr Asp Ile
 275 280 285

Gly Thr Glu Leu Ala Met Ala Phe Ile Ile Val Ala Gly Ile Cys Leu
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Cys Leu Tyr Phe Leu Phe Leu Cys Phe Met Val Phe Gln Val Phe Arg
 305 310 315 320

Asn Ile Ser Gly Lys Gln Ser Ser Leu Pro Ala Met Ser Lys Val Arg
 325 330 335

Arg Leu His Tyr Glu Gly Leu Ile Phe Arg Phe Lys Phe Leu Met Leu
 340 345 350

Ile Thr Leu Ala Cys Ala Ala Met Thr Val Ile Phe Phe Ile Val Ser
 355 360 365

Gln Val Thr Glu Gly His Trp Lys Trp Gly Gly Ile Thr Val Gln Val
 370 375 380

Asn Ser Ala Phe Phe Thr Gly Ile Tyr Gly Met Trp Asn Leu Tyr Val
 385 390 395 400

Phe Ala Leu Met Phe Leu Tyr Ala Pro Ser His Lys Asn Tyr Gly Glu
 405 410 415

Asp Gln Ser Asn Gly Met Gln Leu Pro Cys Lys Ser Arg Glu Asp Cys
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Ala Leu Phe Val Ser Glu Leu Tyr Gln Glu Leu Phe Ser Ala Ser Lys
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Tyr Ser Phe Ile Asn Asp Asn Ala Ala Ser Gly Ile
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<222> (376)..(1755)

<400> 148

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Cys Leu Gly Asp Pro Ile Ile Val Thr Arg Ser Glu Thr Leu Lys Arg
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Gln Phe Gln Gly Lys Leu Lys Pro Met Thr Ser Cys Phe Leu Phe Thr
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Phe Pro Ser Pro Met Asp Val Ser Leu Ala Tyr Arg Asp Asp Ala Phe
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gct gag tgg act gaa atg gcc cat gaa aga gta cca cgg aaa ctg aaa 603
Ala Glu Trp Thr Glu Met Ala His Glu Arg Val Pro Arg Lys Leu Lys
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tgc acc ttc aca tct ccc aag act cca gag cat gag ggc cgt tac tat 651
Cys Thr Phe Thr Ser Pro Lys Thr Pro Glu His Glu Gly Arg Tyr Tyr
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gaa tgt gat gtc ctt cct ttc atg gaa att ggg tct gtg gcc cat aag 699
Glu Cys Asp Val Leu Pro Phe Met Glu Ile Gly Ser Val Ala His Lys
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Phe Tyr Leu Leu Asn Ile Arg Leu Pro Val Asn Glu Lys Lys Lys Ile
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aat gtg gga att ggg gag ata aag gat atc cgg ttg gtg ggg atc cac 795
Asn Val Gly Ile Gly Glu Ile Lys Asp Ile Arg Leu Val Gly Ile His
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caa aat gga ggc ttc acc aag gtg tgg ttt gcc atg aag acc ttc ctt 843
Gln Asn Gly Gly Phe Thr Lys Val Trp Phe Ala Met Lys Thr Phe Leu
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Thr Pro Ser Ile Phe Ile Ile Met Val Trp Tyr Trp Arg Arg Ile Thr

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cac	atg	atg	gat	cag	cac	gag	cgg	aac	cac	atc	gca	ggg	tat	tgg	aag	1131														
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Asn Tyr Gly Glu Asp Gln Ser Asn Gly Met Gln Leu Pro Cys Lys Ser
415 420 425

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Arg Glu Asp Cys Ala Leu Phe Val Ser Glu Leu Tyr Gln Glu Leu Phe
430 435 440

agc gct tcg aaa tat tcc ttc atc aat gac aac gca gct tct ggt att 1755
Ser Ala Ser Lys Tyr Ser Phe Ile Asn Asp Asn Ala Ala Ser Gly Ile
445 450 455 460

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35 40 45
Ser Gln Lys Asp Cys Asn Cys Leu His Val Val Glu Pro Met Pro Val
50 55 60
Pro Gly His Asp Val Glu Ala Tyr Cys Leu Leu Cys Glu Cys Arg Tyr
65 70 75 80
Glu Glu Arg Ser Thr Thr Thr Ile Lys Val Ile Ile Val Ile Tyr Leu
85 90 95
Ser Val Val Gly Ala Leu Leu Leu Tyr Met Ala Phe Leu Met Leu Val
100 105 110
Asp Pro Leu Ile Arg Lys Pro Asp Ala Tyr Thr Glu Gln Leu His Asn
115 120 125
Glu Glu Glu Asn Glu Asp Ala Arg Ser Met Ala Ala Ala Ala Ala Ser
130 135 140

Leu Gly Gly Pro Arg Ala Asn Thr Val Leu Glu Arg Val Glu Gly Ala
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Asp Arg His Lys Met Leu Ser
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<222> (120)..(668)

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atg aag ctc tta tct ttg gtg gct gtg gtc ggg tgt ttg ctg gtg ccc 167
Met Lys Leu Leu Ser Leu Val Ala Val Val Gly Cys Leu Leu Val Pro
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Pro Ala Glu Ala Asn Lys Ser Ser Glu Asp Ile Arg Cys Lys Cys Ile
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Cys Pro Pro Tyr Arg Asn Ile Ser Gly His Ile Tyr Asn Gln Asn Val
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Ser Gln Lys Asp Cys Asn Cys Leu His Val Val Glu Pro Met Pro Val
50 55 60
cct ggc cat gac gtg gag gcc tac tgc ctg ctg tgc gag tgc agg tac 359
Pro Gly His Asp Val Glu Ala Tyr Cys Leu Leu Cys Glu Cys Arg Tyr
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Glu Glu Arg Ser Thr Thr Thr Ile Lys Val Ile Ile Val Ile Tyr Leu
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Ser Val Val Gly Ala Leu Leu Leu Tyr Met Ala Phe Leu Met Leu Val
100 105 110
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Asp Pro Leu Ile Arg Lys Pro Asp Ala Tyr Thr Glu Gln Leu His Asn
115 120 125
gag gag gag aat gag gat gct cgc tct atg gca gca gct gct gca tcc 551

Glu Glu Glu Asn Glu Asp Ala Arg Ser Met Ala Ala Ala Ala Ser
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 Leu Gly Gly Pro Arg Ala Asn Thr Val Leu Glu Arg Val Glu Gly Ala
 145 150 155 160
 cag cag cgg tgg aag ctg cag gtg cag gag cag cgg aag aca gtc ttc 647
 Gln Gln Arg Trp Lys Leu Gln Val Gln Glu Gln Arg Lys Thr Val Phe
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 Asp Arg His Lys Met Leu Ser
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 His Gly Pro Ser Lys Leu Cys Asp Asp Pro Gln Ala Ser Leu Val Pro
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 Thr Glu Gly Ser Ala Gly Pro Gln Ser Leu Pro Leu Pro Ile Leu Glu
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Ser Leu Glu Ser Ser Ser Glu Gln Lys Phe Tyr Asn Phe Val Ile Leu
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His Ala Arg Ala Asp Glu His Ile Ala Leu Arg Val Arg Glu Lys Leu
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Arg Glu Ser Leu Asp Ile Leu Ala Pro Gly Arg Arg Arg Lys Asn Met
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Ser Glu Phe Leu Gly Glu Ala Ser Ile Pro Gly Gln Glu Pro Pro Thr
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Arg Leu Pro Arg Gly Leu Arg Phe Asp His Asp Ser Trp Glu Glu Glu
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Cys His Gln Gln Glu Ala Val Trp Glu Leu Leu His Thr Glu Ala Ser
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Tyr Ile Arg Lys Leu Arg Val Ile Ile Asn Leu Phe Leu Cys Cys Leu
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Gln Gln Leu Arg Ala Gln Glu Pro Pro Gly Ser Gln Gln Pro Leu Gln
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Trp Asp Cys Arg Gly Ala Pro Ser Pro Gly Ser Gly Pro Gly Leu Val
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cgaggcctgt gacagcaagt tccacagcac c atg cat tat gat ggg cat gtc 172
Met His Tyr Asp Gly His Val
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Arg Phe Asp Leu Pro Pro Gln Gly Ser Val Leu Ala Arg Asn Val Ser
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acc cgg tca tgc ccg ccg cgc acc agc ccc gca gtg gac ttg gag gag 268
Thr Arg Ser Cys Pro Pro Arg Thr Ser Pro Ala Val Asp Leu Glu Glu
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gag gag gag gag agc tct gtg gat ggc aaa ggg gac cgg aag agc aca 316
Glu Glu Glu Glu Ser Ser Val Asp Gly Lys Gly Asp Arg Lys Ser Thr
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ggc ctg aaa ctc tcc aag aag aaa gca agg agg aga cac acg gat gac 364
Gly Leu Lys Leu Ser Lys Lys Lys Ala Arg Arg Arg His Thr Asp Asp
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cca agc aag gaa tgc ttc act ctg aaa ttt gac ctg aat gtg gac att 412
Pro Ser Lys Glu Cys Phe Thr Leu Lys Phe Asp Leu Asn Val Asp Ile
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Leu Leu Pro Val Phe Glu Arg Lys Gly Ile Ala Leu Gly Lys Val Asp
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Ile Tyr Leu Asp Gln Ser Asn Thr Pro Leu Ser Leu Thr Phe Glu Ala
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Tyr Arg Phe Gly Gly His Tyr Leu Arg Val Lys Ala Pro Ala Lys Pro

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Gln Leu His Arg Arg Leu Trp Ala Ser Val Met Ala Pro Val Leu Glu	
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Lys Ala Arg Arg Thr Arg Ala Leu Leu Gln Pro Gly Asp Phe Leu Lys	
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Met Glu Glu Glu Gly Cys Met Glu Tyr Met Arg Gly Leu Leu Arg Asp	
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Phe Gln Ala Ser Gly Gln Ala Leu Cys Arg Gly Trp Val Asp Thr Ile	
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Thr	Leu	Ala	Gln	Leu	Tyr	Arg	Ile	Arg	Thr	Thr	Leu	Leu	Leu	Asn	Ser		
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Thr	Leu	Thr	Ala	Ser	Glu	Val											
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 Arg Arg Arg His Thr Asp Asp Pro Ser Lys Glu Cys Phe Thr Leu Lys
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 Lys Lys Ser Leu Gly Glu Val Leu Leu Pro Val Phe Glu Arg Lys Gly
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 Ile Ala Leu Gly Lys Val Asp Ile Tyr Leu Asp Gln Ser Asn Thr Pro
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 Val Lys Ala Pro Ala Lys Pro Gly Asp Glu Gly Lys Val Glu Gln Gly
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 Met Lys Asp Ser Lys Ser Leu Ser Leu Pro Ile Leu Arg Pro Ala Gly
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 Thr Gly Pro Pro Ala Leu Glu Arg Val Asp Ala Gln Ser Arg Arg Glu
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 Ser Leu Asp Ile Leu Ala Pro Gly Arg Arg Arg Lys Asn Met Ser Glu
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 Phe Leu Gly Glu Ala Ser Ile Pro Gly Gln Glu Pro Pro Thr Pro Ser
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Glu	Asp	Glu	Asp	Glu	Asp	Asn	Ala	Cys	Leu	Arg	Leu	Glu	Asp	Ser	Trp					
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Gln	Gln	Glu	Ala	Val	Trp	Glu	Leu	Leu	His	Thr	Glu	Ala	Ser	Tyr	Ile					
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Leu	Gln	Glu	Ser	Gly	Leu	Leu	Cys	Glu	Val	Glu	Ala	Glu	Arg	Leu	Phe					
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Ser	Asn	Ile	Pro	Glu	Ile	Ala	Gln	Leu	His	Arg	Arg	Leu	Trp	Ala	Ser					
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Ser	Val	Leu	Arg	Lys	Thr	Glu	Glu	Pro	Arg	Ala	Lys	Glu	Ala	Val	Val					
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Met	Arg	Gln	Arg	Gln	Glu	Arg	Gln	Arg	Leu	Ala	Ala	Val	Val	Ser	Arg					
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Ala Ser Pro Glu Glu Thr Arg Gln	Leu Leu Glu Gly	Ser Leu Arg				
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Met Lys Glu Gly Lys Asp Ser	Lys Met Asp Val Tyr Cys	Phe Leu Phe				
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Thr Asp Leu Leu Leu Val Thr	Lys Ala Val Lys Lys Ala	Glu Arg Thr				
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Arg Val Ile Arg Pro Pro	Leu Leu Val Asp Lys	Ile Val Cys Arg	Glu			
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Leu Arg Asp Pro Gly Ser Phe	Leu Leu Ile Tyr Leu Asn	Glu Phe His				
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Ser Ala Val Gly Ala Tyr Thr	Phe Gln Ala Ser Gly Gln	Ala Leu Cys				
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Arg Gly Trp Val Asp Thr Ile	Tyr Asn Ala Gln Asn	Gln Leu Gln Gln				
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Glu Glu Glu Glu Asp Glu Gln	Glu Glu Glu Glu Glu Glu	Glu Glu Glu Glu				
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Glu Glu Glu Gly Glu Asp Ser	Gly Thr Ser Ala Ala Ser	Ser Ser Pro Thr				
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Ile Met Arg Lys Ser Ser Gly	Ser Pro Asp Ser Gln His	Cys Ala Ser				
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Glu Leu Leu Pro Leu Gly Pro	Val Asp Gly Arg Ser Cys	Ser Met Asp				
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Ser Ala Tyr Gly Thr Leu Ser	Pro Thr Ser Leu Gln Asp	Phe Val Ala				
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Pro Gly Pro Met Ala Glu Leu	Val Pro Arg Ala Pro	Glu Ser Pro Arg				
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Val Pro Ser Pro Pro Pro Ser	Pro Arg Leu Arg Arg	Thr Pro Val				

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Ala	Pro	Ser	Arg 900	Ser	Leu	Ser	Glu	Leu	Cys 905	Leu	Ala	Val	Pro 910	Ala	Pro
Gly	Ile	Arg 915	Thr	Gln	Gly	Ser	Pro 920	Gln	Glu	Ala	Gly	Pro 925	Ser	Trp	Asp
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Pro	Ser	Gly	Ala	Ser 965	Pro	Arg	Val	Gln	Pro 970	Glu	Pro	Pro	Pro	Gly 975	Val
Ser	Ala	Gln	His 980	Arg	Lys	Leu	Thr	Leu 985	Ala	Gln	Leu	Tyr	Arg 990	Ile	Arg
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Ala Arg Gly Gln Ser Gln Ser Leu Gln Ala Ser Gly Leu Gln Pro Arg
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Ser Leu Lys Ala Ala Arg Arg Ala Thr Gly Arg Pro Asp Arg Ser Arg
          25                      30                      35

gca gcc ccg ccc aac atg gac cca gac ccc cag gcg ggc gtg cag gtg 257
Ala Ala Pro Pro Asn Met Asp Pro Asp Pro Gln Ala Gly Val Gln Val

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Gly Met Arg Val Val Arg Gly Val Asp Trp Lys Trp Gly Gln Gln Asp	60	65	70	
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Gly Gly Glu Gly Gly Val Gly Thr Val Val Glu Leu Gly Arg His Gly	75	80	85	
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Ser Pro Ser Thr Pro Asp Arg Thr Val Val Val Gln Trp Asp Gln Gly	90	95	100	
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Thr Arg Thr Asn Tyr Arg Ala Gly Tyr Gln Gly Ala His Asp Leu Leu	105	110	115	
ctg tac gac aac gcc cag atc ggc gtc cgg cac ccc aac atc atc tgt				497
Leu Tyr Asp Asn Ala Gln Ile Gly Val Arg His Pro Asn Ile Ile Cys	120	125	130	135
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Asp Cys Cys Lys Lys His Gly Leu Arg Gly Met Arg Trp Lys Cys Arg	140	145	150	
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Val Cys Leu Asp Tyr Asp Leu Cys Thr Gln Cys Tyr Met His Asn Lys	155	160	165	
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His Glu Leu Ala His Ala Phe Asp Arg Tyr Glu Thr Ala His Ser Arg	170	175	180	
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Pro Val Thr Leu Ser Pro Arg Gln Gly Leu Pro Arg Ile Pro Leu Arg	185	190	195	
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Gly Ile Phe Gln Gly Ala Lys Val Val Arg Gly Pro Phe Trp Glu Trp	200	205	210	215
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Gly Ser Gln Asp Gly Gly Glu Gly Lys Pro Gly Arg Val Val Asp Ile	220	225	230	
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Arg Gly Trp Asp Val Glu Thr Gly Arg Ser Val Ala Ser Val Thr Trp	235	240	245	
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Pro Arg Met Ala Glu Phe Ile Gly Gln Thr Gly Thr Val His Arg Ile	
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Val Ala Gly Gln Arg Trp Thr Phe Ser Pro Ser Cys Leu Val Ala Tyr	
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Asn Lys Ser Ser Leu Ser Val Ala Leu Asp Lys Leu Arg Ala Gln Lys	

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tgc	atc	cgg	cag	tgc	agc	ggg	ccc	ctt	tac	acg	gac	cgc	atg	gtg	ctt	2226	
Cys	Ile	Arg	Gln	Cys	Ser	Gly	Pro	Leu	Tyr	Thr	Asp	Arg	Met	Val	Leu		
			700					705						710			
ctg	gtc	atg	ggc	aac	att	atc	aac	tgg	tgc	ctg	gct	gca	tac	gga	ctc	2274	
Leu	Val	Met	Gly	Asn	Ile	Ile	Asn	Trp	Ser	Leu	Ala	Ala	Tyr	Gly	Leu		
			715					720						725			
atc	atg	cgc	ccc	aat	gac	ttt	gct	tcc	tac	ttg	ctg	gca	att	ggc	atc	2322	
Ile	Met	Arg	Pro	Asn	Asp	Phe	Ala	Ser	Tyr	Leu	Leu	Ala	Ile	Gly	Ile		
			730					735						740			
tgc	aac	ctg	ctg	ctt	tat	ttc	gcc	ttc	tac	atc	atc	atg	aag	ctc	cgg	2370	
Cys	Asn	Leu	Leu	Leu	Tyr	Phe	Ala	Phe	Tyr	Ile	Ile	Met	Lys	Leu	Arg		
					750					755					760		
agc	ggc	gag	agg	atc	aag	ctc	atc	cct	ctg	ctt	tgc	atc	gtc	tgc	acc	2418	
Ser	Gly	Glu	Arg	Ile	Lys	Leu	Ile	Pro	Leu	Leu	Cys	Ile	Val	Cys	Thr		
				765					770					775			
tcc	gtg	gtc	tgg	ggc	ttc	gcg	ctc	ttc	ttc	ttc	ttc	cag	gga	ctg	agc	2466	
Ser	Val	Val	Trp	Gly	Phe	Ala	Leu	Phe	Phe	Phe	Phe	Gln	Gly	Leu	Ser		
				780					785					790			
acg	tgg	cag	aaa	acc	ccc	gca	gag	tcc	agg	gag	cac	aac	cgc	gac	tgc	2514	
Thr	Trp	Gln	Lys	Thr	Pro	Ala	Glu	Ser	Arg	Glu	His	Asn	Arg	Asp	Cys		
			795					800						805			
atc	ctc	ctc	gac	ttc	ttt	gat	gac	cac	gat	atc	tgg	cac	ttc	ctg	tcc	2562	
Ile	Leu	Leu	Asp	Phe	Phe	Asp	Asp	His	Asp	Ile	Trp	His	Phe	Leu	Ser		
			810					815						820			
tcc	att	gcc	atg	ttt	ggg	tcc	ttc	ctg	gtt	ttg	ctg	acg	ttg	gat	gac	2610	
Ser	Ile	Ala	Met	Phe	Gly	Ser	Phe	Leu	Val	Leu	Leu	Thr	Leu	Asp	Asp		
					830					835				840			
gac	ttg	gac	aca	gta	cag	cgg	gac	aag	atc	tat	gtc	ttc	tagcagc	atc		2659	
Asp	Leu	Asp	Thr	Val	Gln	Arg	Asp	Lys	Ile	Tyr	Val	Phe					
				845					850								
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<212> PRT

<213> Homo sapiens

<400> 164

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 20 25 30

Ala Glu Phe Glu Arg Thr Tyr Ala Asp Asp Val Asn Ser Glu Leu Val
 35 40 45

Asn Ile Tyr Thr Phe Asn His Thr Val Thr Arg Asn Arg Thr Glu Gly

50					55					60					
Val	Arg	Val	Ser	Val	Asn	Val	Leu	Asn	Lys	Gln	Lys	Gly	Ala	Pro	Leu
65					70					75					80
Leu	Phe	Val	Val	Arg	Gln	Lys	Glu	Ala	Val	Val	Ser	Phe	Gln	Val	Pro
				85					90					95	
Leu	Ile	Leu	Arg	Gly	Leu	Tyr	Gln	Arg	Lys	Tyr	Leu	Tyr	Gln	Lys	Val
			100					105					110		
Glu	Arg	Thr	Leu	Cys	Gln	Pro	Pro	Thr	Lys	Asn	Glu	Ser	Glu	Ile	Gln
		115					120					125			
Phe	Phe	Tyr	Val	Asp	Val	Ser	Thr	Leu	Ser	Pro	Val	Asn	Thr	Thr	Tyr
		130				135					140				
Gln	Leu	Arg	Val	Asn	Arg	Val	Asp	Asn	Phe	Val	Leu	Arg	Thr	Gly	Glu
145				150					155						160
Leu	Phe	Thr	Phe	Asn	Thr	Thr	Ala	Ala	Gln	Pro	Gln	Tyr	Phe	Lys	Tyr
				165					170					175	
Glu	Phe	Pro	Asp	Gly	Val	Asp	Ser	Val	Ile	Val	Lys	Val	Thr	Ser	Lys
			180					185					190		
Lys	Ala	Phe	Pro	Cys	Ser	Val	Ile	Ser	Ile	Gln	Asp	Val	Leu	Cys	Pro
		195					200					205			
Val	Tyr	Asp	Leu	Asp	Asn	Ser	Val	Ala	Phe	Ile	Gly	Met	Tyr	Gln	Thr
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Met	Thr	Lys	Lys	Ala	Ala	Ile	Thr	Val	Gln	Arg	Lys	Asp	Phe	Pro	Ser
225				230						235					240
Asn	Ser	Phe	Tyr	Val	Val	Val	Val	Val	Val	Lys	Thr	Glu	Asp	Gln	Cys
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Gly	Gly	Ser	Leu	Pro	Phe	Tyr	Pro	Phe	Val	Glu	Asp	Glu	Pro	Val	Asp
			260					265					270		
Gln	Gly	His	Arg	Gln	Lys	Thr	Leu	Ser	Val	Leu	Val	Ser	Gln	Ala	Val
		275					280					285			
Thr	Ser	Glu	Ala	Tyr	Val	Gly	Gly	Met	Leu	Phe	Cys	Leu	Gly	Ile	Phe
		290				295					300				
Leu	Ser	Phe	Tyr	Leu	Leu	Thr	Val	Leu	Leu	Ala	Cys	Trp	Glu	Asn	Trp
305				310						315					320
Arg	Gln	Arg	Lys	Lys	Thr	Leu	Leu	Val	Ala	Ile	Asp	Arg	Ala	Cys	Pro
				325					330					335	
Glu	Ser	Gly	His	Ala	Arg	Val	Leu	Ala	Asp	Ser	Phe	Pro	Gly	Ser	Ala
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Pro	Tyr	Glu	Gly	Tyr	Asn	Tyr	Gly	Ser	Phe	Glu	Asn	Gly	Ser	Gly	Ser

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Thr	Asp	Gly	Leu	Val	Glu	Ser	Ala	Gly	Ser	Gly	Asp	Leu	Ser	Tyr	Ser
370						375					380				
Tyr	Gln	Gly	His	Asp	Gln	Phe	Lys	Arg	Arg	Leu	Pro	Ser	Gly	Gln	Met
385					390					395					400
Arg	Gln	Leu	Cys	Ile	Ala	Met	Asp	Arg	Ser	Phe	Asp	Ala	Val	Gly	Pro
				405					410					415	
Arg	Pro	Arg	Leu	Asp	Ser	Met	Ser	Ser	Val	Glu	Glu	Asp	Asp	Tyr	Asp
			420					425					430		
Thr	Leu	Thr	Asp	Ile	Asp	Ser	Asp	Lys	Asn	Val	Ile	Arg	Thr	Lys	Gln
		435					440					445			
Tyr	Leu	Cys	Val	Ala	Asp	Leu	Ala	Arg	Lys	Asp	Lys	Arg	Val	Leu	Arg
	450					455					460				
Lys	Lys	Tyr	Gln	Ile	Tyr	Phe	Trp	Asn	Ile	Ala	Thr	Ile	Ala	Val	Phe
465					470					475					480
Tyr	Ala	Leu	Pro	Val	Val	Gln	Leu	Val	Ile	Thr	Tyr	Gln	Thr	Val	Val
				485					490					495	
Asn	Val	Thr	Gly	Asn	Gln	Asp	Ile	Cys	Tyr	Tyr	Asn	Phe	Leu	Cys	Ala
			500					505					510		
His	Pro	Leu	Gly	Asn	Leu	Ser	Ala	Phe	Asn	Asn	Ile	Leu	Ser	Asn	Leu
		515					520					525			
Gly	Tyr	Ile	Leu	Leu	Gly	Leu	Leu	Phe	Leu	Leu	Ile	Ile	Leu	Gln	Arg
	530					535					540				
Glu	Ile	Asn	His	Asn	Arg	Ala	Leu	Leu	Arg	Asn	Asp	Leu	Tyr	Ala	Leu
545				550						555					560
Glu	Cys	Gly	Ile	Pro	Lys	His	Phe	Gly	Leu	Phe	Tyr	Ala	Met	Gly	Thr
				565					570					575	
Ala	Leu	Met	Met	Glu	Gly	Leu	Leu	Ser	Ala	Cys	Tyr	His	Val	Cys	Pro
			580					585					590		
Asn	Tyr	Thr	Asn	Phe	Gln	Phe	Asp	Thr	Ser	Phe	Met	Tyr	Met	Ile	Ala
		595					600					605			
Gly	Leu	Cys	Met	Leu	Lys	Leu	Tyr	Gln	Lys	Arg	His	Pro	Asp	Ile	Asn
	610					615					620				
Ala	Ser	Ala	Tyr	Ser	Ala	Tyr	Ala	Cys	Leu	Ala	Ile	Val	Ile	Phe	Phe
625				630						635					640
Ser	Val	Leu	Gly	Val	Val	Phe	Gly	Lys	Gly	Asn	Thr	Ala	Phe	Trp	Ile
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Val	Phe	Ser	Val	Ile	His	Ile	Ile	Ser	Thr	Leu	Leu	Leu	Ser	Thr	Gln

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Leu	Tyr	Tyr	Met	Gly	Arg	Trp	Lys	Leu	Asp	Phe	Gly	Ile	Phe	Arg	Arg
	675						680					685			
Ile	Leu	His	Val	Leu	Tyr	Thr	Asp	Cys	Ile	Arg	Gln	Cys	Ser	Gly	Pro
	690					695					700				
Leu	Tyr	Thr	Asp	Arg	Met	Val	Leu	Leu	Val	Met	Gly	Asn	Ile	Ile	Asn
705					710					715					720
Trp	Ser	Leu	Ala	Ala	Tyr	Gly	Leu	Ile	Met	Arg	Pro	Asn	Asp	Phe	Ala
			725						730					735	
Ser	Tyr	Leu	Leu	Ala	Ile	Gly	Ile	Cys	Asn	Leu	Leu	Leu	Tyr	Phe	Ala
		740						745					750		
Phe	Tyr	Ile	Ile	Met	Lys	Leu	Arg	Ser	Gly	Glu	Arg	Ile	Lys	Leu	Ile
	755						760					765			
Pro	Leu	Leu	Cys	Ile	Val	Cys	Thr	Ser	Val	Val	Trp	Gly	Phe	Ala	Leu
	770					775					780				
Phe	Phe	Phe	Phe	Gln	Gly	Leu	Ser	Thr	Trp	Gln	Lys	Thr	Pro	Ala	Glu
785					790					795					800
Ser	Arg	Glu	His	Asn	Arg	Asp	Cys	Ile	Leu	Leu	Asp	Phe	Phe	Asp	Asp
			805						810					815	
His	Asp	Ile	Trp	His	Phe	Leu	Ser	Ser	Ile	Ala	Met	Phe	Gly	Ser	Phe
		820					825						830		
Leu	Val	Leu	Leu	Thr	Leu	Asp	Asp	Asp	Leu	Asp	Thr	Val	Gln	Arg	Asp
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 Met Phe Ala Leu Gly Leu Pro Phe Leu Val
 1 5 10
 ctc ttg gtg gcc tcg gtc gag agc cat ctg ggg gtt ctg ggg ccc aag 161

Leu	Leu	Val	Ala	Ser	Val	Glu	Ser	His	Leu	Gly	Val	Leu	Gly	Pro	Lys	
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aac	gtc	tcg	cag	aaa	gac	gcc	gag	ttt	gag	cgc	acc	tac	gtg	gac	gag	209
Asn	Val	Ser	Gln	Lys	Asp	Ala	Glu	Phe	Glu	Arg	Thr	Tyr	Val	Asp	Glu	
			30					35					40			
gtc	aac	agc	gag	ctg	gtc	aac	atc	tac	acc	ttc	aac	cat	act	gtg	acc	257
Val	Asn		Glu	Leu	Val	Asn	Ile	Tyr	Thr	Phe	Asn	His	Thr	Val	Thr	
		45					50					55				
cgc	aac	agg	aca	gag	ggc	gtg	cgt	gtg	tct	gtg	aac	gtc	ctg	aac	aag	305
Arg	Asn	Arg	Thr	Glu	Gly	Val	Arg	Val	Ser	Val	Asn	Val	Leu	Asn	Lys	
	60					65					70					
cag	aag	ggg	gcg	ccg	ttg	ctg	ttt	gtg	gtc	cgc	cag	aag	gag	gct	gtg	353
Gln	Lys	Gly	Ala	Pro		Leu	Phe	Val	Val	Arg	Gln	Lys	Glu	Ala	Val	
	75				80					85					90	
gtg	tcc	ttc	cag	gtg	ccc	cta	atc	ctg	cga	ggg	atg	ttt	cag	cgc	aag	401
Val	Ser	Phe	Gln	Val	Pro	Leu	Ile	Leu	Arg	Gly	Met	Phe	Gln	Arg	Lys	
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tac	ctc	tac	caa	aaa	gtg	gaa	cga	acc	ctg	tgt	cag	ccc	ccc	acc	aag	449
Tyr	Leu	Tyr	Gln	Lys	Val	Glu	Arg	Thr	Leu	Cys	Gln	Pro	Pro	Thr	Lys	
			110					115					120			
aat	gag	tcg	gag	att	cag	ttc	ttc	tac	gtg	gat	gtg	tcc	acc	ctg	tca	497
Asn	Glu	Ser	Glu	Ile	Gln	Phe	Phe	Tyr	Val	Asp	Val	Ser	Thr	Leu	Ser	
		125					130					135				
cca	gtc	aac	acc	aca	tac	cag	ctc	cgg	gtc	agc	cgc	atg	gac	gat	ttt	545
Pro	Val	Asn	Thr	Thr	Tyr	Gln	Leu	Arg	Val	Ser	Arg	Met	Asp	Asp	Phe	
	140					145					150					
gtg	ctc	agg	act	ggg	gag	cag	ttc	agc	ttc	aat	acc	aca	gca	gca	cag	593
Val	Leu	Arg	Thr	Gly	Glu	Gln	Phe	Ser	Phe	Asn	Thr	Thr	Ala	Ala	Gln	
	155				160					165					170	
ccc	cag	tac	ttc	aag	tat	gag	ttc	cct	gaa	ggc	gtg	gac	tcg	gta	att	641
Pro	Gln	Tyr	Phe	Lys	Tyr	Glu	Phe	Pro	Glu	Gly	Val	Asp	Ser	Val	Ile	
			175						180					185		
gtc	aag	gtg	acc	tcc	aac	aag	gcc	ttc	ccc	tgc	tca	gtc	atc	tcc	att	689
Val	Lys	Val	Thr	Ser	Asn	Lys	Ala	Phe	Pro	Cys	Ser	Val	Ile	Ser	Ile	
			190					195					200			
cag	gat	gtg	ctg	tgt	cct	gtc	tat	gac	ctg	gac	aac	aac	gta	gcc	ttc	737
Gln	Asp	Val	Leu	Cys	Pro	Val	Tyr	Asp	Leu	Asp	Asn	Asn	Val	Ala	Phe	
		205					210					215				
atc	ggc	atg	tac	cag	acg	atg	acc	aag	aag	gcg	gcc	atc	acc	gta	cag	785
Ile	Gly	Met	Tyr	Gln	Thr	Met	Thr	Lys	Lys	Ala	Ala	Ile	Thr	Val	Gln	
	220					225					230					
cgc	aaa	gac	ttc	ccc	agc	aac	agc	ttt	tat	gtg	gtg	gtg	gtg	gtg	aag	833
Arg	Lys	Asp	Phe	Pro	Ser	Asn	Ser	Phe	Tyr	Val	Val	Val	Val	Val	Lys	

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acc gaa gac caa gcc tgc ggg ggc tcc ctg oct ttc tac ccc ttc gca	881			
Thr Glu Asp Gln Ala Cys Gly Gly Ser Leu Pro Phe Tyr Pro Phe Ala				
255	260	265		
gaa gat gaa ccg gtc gat caa ggg cac cgc cag aaa acc ctg tca gtg	929			
Glu Asp Glu Pro Val Asp Gln Gly His Arg Gln Lys Thr Leu Ser Val				
270	275	280		
ctg gtg tct caa gca gtc acg tct gag gca tac gtc agt ggg atg ctc	977			
Leu Val Ser Gln Ala Val Thr Ser Glu Ala Tyr Val Ser Gly Met Leu				
285	290	295		
ttt tgc ctg ggt ata ttt ctc tcc ttt tac ctg ctg acc gtc ctc ctg	1025			
Phe Cys Leu Gly Ile Phe Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu				
300	305	310		
gcc tgc tgg gag aac tgg agg cag aag aag aag acc ctg ctg gtg gcc	1073			
Ala Cys Trp Glu Asn Trp Arg Gln Lys Lys Lys Thr Leu Leu Val Ala				
315	320	325	330	
att gac cga gcc tgc cca gaa agc ggt cac cct cga gtc ctg gct gat	1121			
Ile Asp Arg Ala Cys Pro Glu Ser Gly His Pro Arg Val Leu Ala Asp				
335	340	345		
tct ttt cct ggc agt tcc cct tat gag ggt tac aac tat ggc tcc ttt	1169			
Ser Phe Pro Gly Ser Ser Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe				
350	355	360		
gag aat gtt tct gga tct acc gat ggt ctg gtt gac agc gct ggc act	1217			
Glu Asn Val Ser Gly Ser Thr Asp Gly Leu Val Asp Ser Ala Gly Thr				
365	370	375		
ggg gac ctc tct tac ggt tac cag ggg cac gac cag ttc aag cgg cgc	1265			
Gly Asp Leu Ser Tyr Gly Tyr Gln Gly His Asp Gln Phe Lys Arg Arg				
380	385	390		
ctc ccc tct ggc cag atg cgg cag ctg tgc att gcc atg ggc cgc tcc	1313			
Leu Pro Ser Gly Gln Met Arg Gln Leu Cys Ile Ala Met Gly Arg Ser				
395	400	405	410	
ttt gaa cct gta ggt act cgg ccc cga gtg gac tcc atg agc tct gtg	1361			
Phe Glu Pro Val Gly Thr Arg Pro Arg Val Asp Ser Met Ser Ser Val				
415	420	425		
gag gag gat gac tac gac aca ttg acc gac atc gat tcc gac aag aat	1409			
Glu Glu Asp Asp Tyr Asp Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn				
430	435	440		
gtc att cgc acc aag caa tac ctc tat gtg gct gac ctg gca cgg aag	1457			
Val Ile Arg Thr Lys Gln Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys				
445	450	455		
gac aag cgt gtt ctg cgg aaa aag tac cag atc tac ttc tgg aac att	1505			
Asp Lys Arg Val Leu Arg Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile				
460	465	470		

gcc acc att gct gtc ttc tat gcc ctt cct gtg gtg cag ctg gtg atc	1553
Ala Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Val Gln Leu Val Ile	
475 480 485 490	
acc tac cag acg gtg gtg aat gtc aca ggg aat cag gac atc tgc tac	1601
Thr Tyr Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr	
495 500 505	
tac aac ttc ctc tgc gcc cac cca ctg ggc aat ctc agc gcc ttc aac	1649
Tyr Asn Phe Leu Cys Ala His Pro Leu Gly Asn Leu Ser Ala Phe Asn	
510 515 520	
aac atc ctc agc aac ctg ggg tac atc ctg ctg ggg ctg ctt ttc ctg	1697
Asn Ile Leu Ser Asn Leu Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu	
525 530 535	
ctc atc atc ctg caa cgg gag atc aac cac aac cgg gcc ctg ctg cgc	1745
Leu Ile Ile Leu Gln Arg Glu Ile Asn His Asn Arg Ala Leu Leu Arg	
540 545 550	
aat gac ctc tgt gcc ctg gaa tgt ggg atc ccc aaa cac ttt ggg ctt	1793
Asn Asp Leu Cys Ala Leu Glu Cys Gly Ile Pro Lys His Phe Gly Leu	
555 560 565 570	
ttc tac gcc atg ggc aca gcc ctg atg atg gag ggg ctg ctc agt gct	1841
Phe Tyr Ala Met Gly Thr Ala Leu Met Met Glu Gly Leu Leu Ser Ala	
575 580 585	
tgc tat cat gtg tgc ccc aac tat acc aat ttc cag ttt gac aca tcg	1889
Cys Tyr His Val Cys Pro Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser	
590 595 600	
ttc atg tac atg atc gcc gga ctc tgc atg ctg aag ctc tac cag aag	1937
Phe Met Tyr Met Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys	
605 610 615	
cgg cac ccg gac atc aac gcc agc gcc tac agt gcc tac gcc tgc ctg	1985
Arg His Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu	
620 625 630	
gcc att gtc atc ttc ttc tct gtg ctg ggc gtg gtc ttt ggc aaa ggg	2033
Ala Ile Val Ile Phe Phe Ser Val Leu Gly Val Val Phe Gly Lys Gly	
635 640 645 650	
aac acg gcg ttc tgg atc gtc ttc tcc atc att cac atc atc gcc acc	2081
Asn Thr Ala Phe Trp Ile Val Phe Ser Ile Ile His Ile Ile Ala Thr	
655 660 665	
ctg ctc ctc agc acg cag ctc tat tac atg ggc cgg tgg aaa ctg gac	2129
Leu Leu Leu Ser Thr Gln Leu Tyr Tyr Met Gly Arg Trp Lys Leu Asp	
670 675 680	
tcg ggg atc ttc cgc cgc atc ctc cac gtg ctc tac aca gac tgc atc	2177
Ser Gly Ile Phe Arg Arg Ile Leu His Val Leu Tyr Thr Asp Cys Ile	
685 690 695	

cgg cag tgc agc ggg ccg ctc tac gtg gac cgc atg gtg ctg ctg gtc 2225
 Arg Gln Cys Ser Gly Pro Leu Tyr Val Asp Arg Met Val Leu Leu Val
 700 705 710

atg ggc aac gtc atc aac tgg tcg ctg gct gcc tat ggg ctt atc atg 2273
 Met Gly Asn Val Ile Asn Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met
 715 720 725 730

cgc ccc aat gat ttc gct tcc tac ttg ttg gcc att ggc atc tgc aac 2321
 Arg Pro Asn Asp Phe Ala Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn
 735 740 745

ctg ctc ctt tac ttc gcc ttc tac atc atc atg aag ctc cgg agt ggg 2369
 Leu Leu Leu Tyr Phe Ala Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly
 750 755 760

gag agg atc aag ctc atc ccc ctg ctc tgc atc gtt tgc acc tcc gtg 2417
 Glu Arg Ile Lys Leu Ile Pro Leu Leu Cys Ile Val Cys Thr Ser Val
 765 770 775

gtc tgg ggc ttc gcg ctc ttc ttc ttc ttc cag gga ctc agc acc tgg 2465
 Val Trp Gly Phe Ala Leu Phe Phe Phe Phe Gln Gly Leu Ser Thr Trp
 780 785 790

cag aaa acc cct gca gag tcg agg gag cac aac cgg gac tgc atc ctc 2513
 Gln Lys Thr Pro Ala Glu Ser Arg Glu His Asn Arg Asp Cys Ile Leu
 795 800 805 810

ctc gac ttc ttt gac gac cac gac atc tgg cac ttc ctc tcc tcc atc 2561
 Leu Asp Phe Phe Asp Asp His Asp Ile Trp His Phe Leu Ser Ser Ile
 815 820 825

gcc atg ttc ggg tcc ttc ctg gta agc ggg cct ccc ggc cga gcc ggg 2609
 Ala Met Phe Gly Ser Phe Leu Val Ser Gly Pro Pro Gly Arg Ala Gly
 830 835 840

tgg gta cgt gaa ggt agc agc tgc ctc ctt ccc tgt ggc tgatctggcg 2658
 Trp Val Arg Glu Gly Ser Ser Cys Leu Leu Pro Cys Gly
 845 850 855

tccacacccc aggtgttgct gacactggat gacgacctgg atacttagaa aggggcttca 2718

ggaaggggatg tgctgtttcc ctctacgtgc ccagtcctag cctcgctcta ggaccaggg 2778

ctggcttcta agtttccgtc cagtcttcag gcaagttctg tgttagtcat gcacacacat 2838

acctatgaaa ccttggagtt tacaaagaat tgccccagct ctgggcaccc tggccaccct 2898

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aggcggggcc tctgctttgg ggatgggaat gtgtttttct cccaaacttg tttttatagc 3018

tctgcttgaa gggctgggag atgaggtggg tctggatctt ttctcagagc gtctccatgc 3078

tatggttgca tttccgtttt ctatgaatga atttgcattc aataaacaac cagactcagt 3138

<210> 166
 <211> 855
 <212> PRT
 <213> Homo sapiens

<400> 166

Met	Phe	Ala	Leu	Gly	Leu	Pro	Phe	Leu	Val	Leu	Leu	Val	Ala	Ser	Val
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Glu	Ser	His	Leu	Gly	Val	Leu	Gly	Pro	Lys	Asn	Val	Ser	Gln	Lys	Asp
			20					25					30		
Ala	Glu	Phe	Glu	Arg	Thr	Tyr	Val	Asp	Glu	Val	Asn	Ser	Glu	Leu	Val
		35					40					45			
Asn	Ile	Tyr	Thr	Phe	Asn	His	Thr	Val	Thr	Arg	Asn	Arg	Thr	Glu	Gly
	50					55					60				
Val	Arg	Val	Ser	Val	Asn	Val	Leu	Asn	Lys	Gln	Lys	Gly	Ala	Pro	Leu
65					70					75					80
Leu	Phe	Val	Val	Arg	Gln	Lys	Glu	Ala	Val	Val	Ser	Phe	Gln	Val	Pro
				85					90					95	
Leu	Ile	Leu	Arg	Gly	Met	Phe	Gln	Arg	Lys	Tyr	Leu	Tyr	Gln	Lys	Val
			100					105					110		
Glu	Arg	Thr	Leu	Cys	Gln	Pro	Pro	Thr	Lys	Asn	Glu	Ser	Glu	Ile	Gln
			115					120					125		
Phe	Phe	Tyr	Val	Asp	Val	Ser	Thr	Leu	Ser	Pro	Val	Asn	Thr	Thr	Tyr
		130					135					140			
Gln	Leu	Arg	Val	Ser	Arg	Met	Asp	Asp	Phe	Val	Leu	Arg	Thr	Gly	Glu
145					150					155					160
Gln	Phe	Ser	Phe	Asn	Thr	Thr	Ala	Ala	Gln	Pro	Gln	Tyr	Phe	Lys	Tyr
				165					170					175	
Glu	Phe	Pro	Glu	Gly	Val	Asp	Ser	Val	Ile	Val	Lys	Val	Thr	Ser	Asn
			180					185					190		
Lys	Ala	Phe	Pro	Cys	Ser	Val	Ile	Ser	Ile	Gln	Asp	Val	Leu	Cys	Pro
		195					200					205			
Val	Tyr	Asp	Leu	Asp	Asn	Asn	Val	Ala	Phe	Ile	Gly	Met	Tyr	Gln	Thr
		210				215					220				
Met	Thr	Lys	Lys	Ala	Ala	Ile	Thr	Val	Gln	Arg	Lys	Asp	Phe	Pro	Ser
225					230					235					240
Asn	Ser	Phe	Tyr	Val	Val	Val	Val	Val	Lys	Thr	Glu	Asp	Gln	Ala	Cys
				245					250					255	
Gly	Gly	Ser	Leu	Pro	Phe	Tyr	Pro	Phe	Ala	Glu	Asp	Glu	Pro	Val	Asp
			260					265					270		

Gln Gly His Arg Gln Lys Thr Leu Ser Val Leu Val Ser Gln Ala Val
 275 280 285
 Thr Ser Glu Ala Tyr Val Ser Gly Met Leu Phe Cys Leu Gly Ile Phe
 290 295 300
 Leu Ser Phe Tyr Leu Leu Thr Val Leu Leu Ala Cys Trp Glu Asn Trp
 305 310 315 320
 Arg Gln Lys Lys Lys Thr Leu Leu Val Ala Ile Asp Arg Ala Cys Pro
 325 330 335
 Glu Ser Gly His Pro Arg Val Leu Ala Asp Ser Phe Pro Gly Ser Ser
 340 345 350
 Pro Tyr Glu Gly Tyr Asn Tyr Gly Ser Phe Glu Asn Val Ser Gly Ser
 355 360 365
 Thr Asp Gly Leu Val Asp Ser Ala Gly Thr Gly Asp Leu Ser Tyr Gly
 370 375 380
 Tyr Gln Gly His Asp Gln Phe Lys Arg Arg Leu Pro Ser Gly Gln Met
 385 390 395 400
 Arg Gln Leu Cys Ile Ala Met Gly Arg Ser Phe Glu Pro Val Gly Thr
 405 410 415
 Arg Pro Arg Val Asp Ser Met Ser Ser Val Glu Glu Asp Asp Tyr Asp
 420 425 430
 Thr Leu Thr Asp Ile Asp Ser Asp Lys Asn Val Ile Arg Thr Lys Gln
 435 440 445
 Tyr Leu Tyr Val Ala Asp Leu Ala Arg Lys Asp Lys Arg Val Leu Arg
 450 455 460
 Lys Lys Tyr Gln Ile Tyr Phe Trp Asn Ile Ala Thr Ile Ala Val Phe
 465 470 475 480
 Tyr Ala Leu Pro Val Val Gln Leu Val Ile Thr Tyr Gln Thr Val Val
 485 490 495
 Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr Tyr Asn Phe Leu Cys Ala
 500 505 510
 His Pro Leu Gly Asn Leu Ser Ala Phe Asn Asn Ile Leu Ser Asn Leu
 515 520 525
 Gly Tyr Ile Leu Leu Gly Leu Leu Phe Leu Leu Ile Ile Leu Gln Arg
 530 535 540
 Glu Ile Asn His Asn Arg Ala Leu Leu Arg Asn Asp Leu Cys Ala Leu
 545 550 555 560
 Glu Cys Gly Ile Pro Lys His Phe Gly Leu Phe Tyr Ala Met Gly Thr
 565 570 575

Ala Leu Met Met Glu Gly Leu Leu Ser Ala Cys Tyr His Val Cys Pro
 580 585 590
 Asn Tyr Thr Asn Phe Gln Phe Asp Thr Ser Phe Met Tyr Met Ile Ala
 595 600 605
 Gly Leu Cys Met Leu Lys Leu Tyr Gln Lys Arg His Pro Asp Ile Asn
 610 615 620
 Ala Ser Ala Tyr Ser Ala Tyr Ala Cys Leu Ala Ile Val Ile Phe Phe
 625 630 635 640
 Ser Val Leu Gly Val Val Phe Gly Lys Gly Asn Thr Ala Phe Trp Ile
 645 650 655
 Val Phe Ser Ile Ile His Ile Ile Ala Thr Leu Leu Leu Ser Thr Gln
 660 665 670
 Leu Tyr Tyr Met Gly Arg Trp Lys Leu Asp Ser Gly Ile Phe Arg Arg
 675 680 685
 Ile Leu His Val Leu Tyr Thr Asp Cys Ile Arg Gln Cys Ser Gly Pro
 690 695 700
 Leu Tyr Val Asp Arg Met Val Leu Leu Val Met Gly Asn Val Ile Asn
 705 710 715 720
 Trp Ser Leu Ala Ala Tyr Gly Leu Ile Met Arg Pro Asn Asp Phe Ala
 725 730 735
 Ser Tyr Leu Leu Ala Ile Gly Ile Cys Asn Leu Leu Leu Tyr Phe Ala
 740 745 750
 Phe Tyr Ile Ile Met Lys Leu Arg Ser Gly Glu Arg Ile Lys Leu Ile
 755 760 765
 Pro Leu Leu Cys Ile Val Cys Thr Ser Val Val Trp Gly Phe Ala Leu
 770 775 780
 Phe Phe Phe Phe Gln Gly Leu Ser Thr Trp Gln Lys Thr Pro Ala Glu
 785 790 795 800
 Ser Arg Glu His Asn Arg Asp Cys Ile Leu Leu Asp Phe Phe Asp Asp
 805 810 815
 His Asp Ile Trp His Phe Leu Ser Ser Ile Ala Met Phe Gly Ser Phe
 820 825 830
 Leu Val Ser Gly Pro Pro Gly Arg Ala Gly Trp Val Arg Glu Gly Ser
 835 840 845
 Ser Cys Leu Leu Pro Cys Gly
 850 855

<210> 167

<211> 2815
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (56)..(571)

<400> 167
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 agg cgc cag cct gcg aag gtg gcg gcg ctg ctg ctc ggg ctg ctc ttg 106
 Arg Arg Gln Pro Ala Lys Val Ala Ala Leu Leu Leu Gly Leu Leu Leu
 5 10 15
 gag tgc aca gaa gcc aaa aag cat tgc tgg tat ttc gaa gga ctc tat 154
 Glu Cys Thr Glu Ala Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr
 20 25 30
 cca acc tat tat ata tgc cgc tcc tac gag gac tgc tgt ggc tcc agg 202
 Pro Thr Tyr Tyr Ile Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg
 35 40 45
 tgc tgt gtg cgg gcc ctc tcc ata cag agg ctg tgg tac ttc tgg ttc 250
 Cys Cys Val Arg Ala Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp Phe
 50 55 60 65
 ctt ctg atg atg ggc gtg ctt ttc tgc tgc gga gcc ggc ttc ttc atc 298
 Leu Leu Met Met Gly Val Leu Phe Cys Gly Ala Gly Phe Phe Ile
 70 75 80
 cgg agg cgc atg tac ccc ccg ccg ctg atc gag gag cca gcc ttc aat 346
 Arg Arg Arg Met Tyr Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn
 85 90 95
 gtg tcc tac acc agg cag ccc cca aat ccc ggc cca gga gcc cag cag 394
 Val Ser Tyr Thr Arg Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln
 100 105 110
 ccg ggg ccg ccc tat tac acc gac cca gga gga ccg ggg atg aac cct 442
 Pro Gly Pro Pro Tyr Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro
 115 120 125
 gtc ggg aat tcc atg gca atg gct ttc cag gtc cca ccc aac tca ccc 490
 Val Gly Asn Ser Met Ala Met Ala Phe Gln Val Pro Pro Asn Ser Pro
 130 135 140 145
 cag ggg agt gtg gcc tgc ccg ccc cct cca gcc tac tgc aac acg cct 538
 Gln Gly Ser Val Ala Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr Pro
 150 155 160
 ccg ccc ccg tac gaa cag gta gtg aag gcc aag tagtggggtg cccacgtgca 591
 Pro Pro Pro Tyr Glu Gln Val Val Lys Ala Lys
 165 170

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 tgcccacttc ctggagtggag acagctcctg gtgtgtagaa ttcccgaggc gtccgtgggtt 2691
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 gggc 2815

<210> 168
 <211> 172
 <212> PRT
 <213> Homo sapiens

<400> 168

Met	Arg	Arg	Gln	Pro	Ala	Lys	Val	Ala	Ala	Leu	Leu	Leu	Gly	Leu	Leu	1	5	10	15
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Tyr	Pro	Thr	Tyr	Tyr	Ile	Cys	Arg	Ser	Tyr	Glu	Asp	Cys	Cys	Gly	Ser	35	40	45	
Arg	Cys	Cys	Val	Arg	Ala	Leu	Ser	Ile	Gln	Arg	Leu	Trp	Tyr	Phe	Trp	50	55	60	
Phe	Leu	Leu	Met	Met	Gly	Val	Leu	Phe	Cys	Cys	Gly	Ala	Gly	Phe	Phe	65	70	75	80
Ile	Arg	Arg	Arg	Met	Tyr	Pro	Pro	Pro	Leu	Ile	Glu	Glu	Pro	Ala	Phe	85	90	95	
Asn	Val	Ser	Tyr	Thr	Arg	Gln	Pro	Pro	Asn	Pro	Gly	Pro	Gly	Ala	Gln	100	105	110	
Gln	Pro	Gly	Pro	Pro	Tyr	Tyr	Thr	Asp	Pro	Gly	Gly	Pro	Gly	Met	Asn	115	120	125	
Pro	Val	Gly	Asn	Ser	Met	Ala	Met	Ala	Phe	Gln	Val	Pro	Pro	Asn	Ser	130	135	140	
Pro	Gln	Gly	Ser	Val	Ala	Cys	Pro	Pro	Pro	Pro	Ala	Tyr	Cys	Asn	Thr	145	150	155	160
Pro	Pro	Pro	Pro	Tyr	Glu	Gln	Val	Val	Lys	Ala	Lys								

165

170

<210> 169
 <211> 3337
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (136)..(1755)

<400> 169
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 agaatctgag cagca atg ccg ttt gct gaa gac aag acc tat aag tat atc 171
 Met Pro Phe Ala Glu Asp Lys Thr Tyr Lys Tyr Ile
 1 5 10
 tgc cgc aat ttc agc aat ttt tgc aat gtg gat gtt gta gag att ctg 219
 Cys Arg Asn Phe Ser Asn Phe Cys Asn Val Asp Val Val Glu Ile Leu
 15 20 25
 cct tac ctg ccc tgc ctc aca gca aga gac cag gat cga ctg cgg gcc 267
 Pro Tyr Leu Pro Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala
 30 35 40
 acc tgc aca ctc tca ggg aac cgg gac acc ctc tgg cat ctc ttc aat 315
 Thr Cys Thr Leu Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn
 45 50 55 60
 acc ctt cag cgg cgg ccc ggc tgg gtg gag tac ttc att gcg gca ctg 363
 Thr Leu Gln Arg Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu
 65 70 75
 agg ggc tgt gag cta gtt gat ctc gcg gac gaa gtg gcc tct gtc tac 411
 Arg Gly Cys Glu Leu Val Asp Leu Ala Asp Glu Val Ala Ser Val Tyr
 80 85 90
 cag agc tac cag cct cgg acc tcg gac cgt ccc cca gac cca ctg gag 459
 Gln Ser Tyr Gln Pro Arg Thr Ser Asp Arg Pro Pro Asp Pro Leu Glu
 95 100 105
 cca ccg tca ctt cct gct gag agg cca ggg ccc ccc aca cct gct gcg 507
 Pro Pro Ser Leu Pro Ala Glu Arg Pro Gly Pro Pro Thr Pro Ala Ala
 110 115 120
 gcc cac agc atc ccc tac aac agc tgc aga gag aag gag cca agt tac 555
 Ala His Ser Ile Pro Tyr Asn Ser Cys Arg Glu Lys Glu Pro Ser Tyr
 125 130 135 140
 ccc atg cct gtc cag gag acc cag gcg cca gag tcc cca gga gag aat 603
 Pro Met Pro Val Gln Glu Thr Gln Ala Pro Glu Ser Pro Gly Glu Asn
 145 150 155

tca gag caa gcc ctg cag acg ctc agc ccc aga gcc atc cca agg aat	651
Ser Glu Gln Ala Leu Gln Thr Leu Ser Pro Arg Ala Ile Pro Arg Asn	
160 165 170	
cca gat ggt ggc ccc ctg gag tcc tcc tct gac ctg gca gcc ctc agc	699
Pro Asp Gly Gly Pro Leu Glu Ser Ser Ser Asp Leu Ala Ala Leu Ser	
175 180 185	
cct ctg acc tcc agc ggg cat cag gag cag gac aca gaa ctg ggc agt	747
Pro Leu Thr Ser Ser Gly His Gln Glu Gln Asp Thr Glu Leu Gly Ser	
190 195 200	
acc cac aca gca ggt gcg acc tcc agc ctc aca cca tcc cgt ggc cct	795
Thr His Thr Ala Gly Ala Thr Ser Ser Leu Thr Pro Ser Arg Gly Pro	
205 210 215 220	
gtg tct cca tct gtc tcc ttc cag ccc ctg gcc cgt tcc acc ccc agg	843
Val Ser Pro Ser Val Ser Phe Gln Pro Leu Ala Arg Ser Thr Pro Arg	
225 230 235	
gca agc cgc ttg cct gga ccc aca ggg tca gtt gta tct act ggc acc	891
Ala Ser Arg Leu Pro Gly Pro Thr Gly Ser Val Val Ser Thr Gly Thr	
240 245 250	
tcc ttc tcc tcc tca tcc cct ggc ttg gcc tct gca ggg gct gca gag	939
Ser Phe Ser Ser Ser Ser Pro Gly Leu Ala Ser Ala Gly Ala Ala Glu	
255 260 265	
ggg aaa cag ggt gca gag agt gac cag gcc gag cct atc atc tgc tcc	987
Gly Lys Gln Gly Ala Glu Ser Asp Gln Ala Glu Pro Ile Ile Cys Ser	
270 275 280	
agt ggg gca gag gca cct gcc aac tct ctg ccc tcc aaa gtg cct acc	1035
Ser Gly Ala Glu Ala Pro Ala Asn Ser Leu Pro Ser Lys Val Pro Thr	
285 290 295 300	
acc ttg atg cct gtg aac aca gtg gcc ctg aaa gtg cct gcc aac cca	1083
Thr Leu Met Pro Val Asn Thr Val Ala Leu Lys Val Pro Ala Asn Pro	
305 310 315	
gca tct gtc agc aca gtg ccc tcc aag ttg cca act agc tca aag ccc	1131
Ala Ser Val Ser Thr Val Pro Ser Lys Leu Pro Thr Ser Ser Lys Pro	
320 325 330	
cct ggt gca gtg cct tct aat gcg ctc acc aat cca gca cca tcc aaa	1179
Pro Gly Ala Val Pro Ser Asn Ala Leu Thr Asn Pro Ala Pro Ser Lys	
335 340 345	
ttg ccc atc aac tca acc cgt gct ggc atg gtg cca tcc aaa gtg cct	1227
Leu Pro Ile Asn Ser Thr Arg Ala Gly Met Val Pro Ser Lys Val Pro	
350 355 360	
act agc atg gtg ctc acc aag gtg tct gcc agc aca gtc ccc act gac	1275
Thr Ser Met Val Leu Thr Lys Val Ser Ala Ser Thr Val Pro Thr Asp	
365 370 375 380	

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 Gly Ser Ser Arg Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly
 385 390 395

gcc act gga ggc agc tca gcc tgg cta gac agc agc tct gag aat agg 1371
 Ala Thr Gly Gly Ser Ser Ala Trp Leu Asp Ser Ser Ser Glu Asn Arg
 400 405 410

ggc ctt ggg tcg gag ctg agt aag cct gcc gtg ctg gca tcc cag gta 1419
 Gly Leu Gly Ser Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val
 415 420 425

gac agc ccg ttc tcg ggc tgc ttc gag gat ctt gcc atc agt gcc agc 1467
 Asp Ser Pro Phe Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser
 430 435 440

acc tcc ttg ggc atg ggg ccc tgc cat ggc cca gag gag aat gag tat 1515
 Thr Ser Leu Gly Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr
 445 450 455 460

aag tcc gag ggc acc ttt ggg atc cac gtg gct gag aac ccc agc atc 1563
 Lys Ser Glu Gly Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile
 465 470 475

cag ctc ctg gag ggc aac cct ggg cca cct gcg gac ccg gat ggc ggc 1611
 Gln Leu Leu Glu Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly
 480 485 490

ccc agg cca caa gcc gac cgg aag ttc cag gag agg gag gtg cca tgc 1659
 Pro Arg Pro Gln Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys
 495 500 505

cac agg ccc tca cct ggg gct ctg tgg ctc cag gtg gct gtg aca ggg 1707
 His Arg Pro Ser Pro Gly Ala Leu Trp Leu Gln Val Ala Val Thr Gly
 510 515 520

gtg ctg gta gtc aca ctc ctg gtg gtg ctg tac cgg cgg cgt ctg cac 1755
 Val Leu Val Val Thr Leu Leu Val Val Leu Tyr Arg Arg Arg Leu His
 525 530 535 540

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cctctccgaa gccccctctt cctccctc tggtctccat tctcttcagc tccctacatg 1875

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gggatttatc tgtctgtccc ttagttttct cacctgtaaa aggaggataa gtatatatat 2295

atatttccca gtgttgtgaa gattaaagga gtttatcgat gtaggtctta ggatgagtcc 2355
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<212> PRT

<213> Homo sapiens

<400> 170

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Cys Leu Thr Ala Arg Asp Gln Asp Arg Leu Arg Ala Thr Cys Thr Leu
 35 40 45

Ser Gly Asn Arg Asp Thr Leu Trp His Leu Phe Asn Thr Leu Gln Arg
 50 55 60

Arg Pro Gly Trp Val Glu Tyr Phe Ile Ala Ala Leu Arg Gly Cys Glu

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Leu Val Asp	Leu Ala Asp	Glu Val Ala	Ser Val Tyr	Gln Ser Tyr	Gln	
	85		90		95	
Pro Arg Thr	Ser Asp Arg	Pro Pro Asp	Pro Leu Glu	Pro Pro Ser	Leu	
	100		105		110	
Pro Ala Glu	Arg Pro Gly	Pro Pro Thr	Pro Ala Ala	Ala His Ser	Ile	
	115		120		125	
Pro Tyr Asn	Ser Cys Arg	Glu Lys Glu	Pro Ser Tyr	Pro Met Pro	Val	
	130		135		140	
Gln Glu Thr	Gln Ala Pro	Glu Ser Pro	Gly Glu Asn	Ser Glu Gln	Ala	
	145		150		155	
Leu Gln Thr	Leu Ser Pro	Arg Ala Ile	Pro Arg Asn	Pro Asp Gly	Gly	
	165		170		175	
Pro Leu Glu	Ser Ser Asp	Leu Ala Ala	Leu Ser Pro	Leu Thr Ser		
	180		185		190	
Ser Gly His	Gln Glu Gln	Asp Thr Glu	Leu Gly Ser	Thr His Thr	Ala	
	195		200		205	
Gly Ala Thr	Ser Ser Leu	Thr Pro Ser	Arg Gly Pro	Val Ser Pro	Ser	
	210		215		220	
Val Ser Phe	Gln Pro Leu	Ala Arg Ser	Thr Pro Arg	Ala Ser Arg	Leu	
	225		230		235	
Pro Gly Pro	Thr Gly Ser	Val Val Ser	Thr Gly Thr	Ser Phe Ser	Ser	
	245		250		255	
Ser Ser Pro	Gly Leu Ala	Ser Ala Gly	Ala Ala Glu	Gly Lys Gln	Gly	
	260		265		270	
Ala Glu Ser	Asp Gln Ala	Glu Pro Ile	Ile Cys Ser	Ser Ser Gly	Ala	
	275		280		285	
Ala Pro Ala	Asn Ser Leu	Pro Ser Lys	Val Pro Thr	Thr Leu Met	Pro	
	290		295		300	
Val Asn Thr	Val Ala Leu	Lys Val Pro	Ala Asn Pro	Ala Ser Val	Ser	
	305		310		315	
Thr Val Pro	Ser Lys Leu	Pro Thr Ser	Ser Lys Pro	Pro Gly Ala	Val	
	325		330		335	
Pro Ser Asn	Ala Leu Thr	Asn Pro Ala	Pro Ser Lys	Leu Pro Ile	Asn	
	340		345		350	
Ser Thr Arg	Ala Gly Met	Val Pro Ser	Lys Val Pro	Thr Ser Met	Val	
	355		360		365	
Leu Thr Lys	Val Ser Ala	Ser Thr Val	Pro Thr Asp	Gly Ser Ser	Arg	

370 375 380
 Asn Glu Glu Thr Pro Ala Ala Pro Thr Pro Ala Gly Ala Thr Gly Gly
 385 390 395 400
 Ser Ser Ala Trp Leu Asp Ser Ser Ser Glu Asn Arg Gly Leu Gly Ser
 405 410 415
 Glu Leu Ser Lys Pro Gly Val Leu Ala Ser Gln Val Asp Ser Pro Phe
 420 425 430
 Ser Gly Cys Phe Glu Asp Leu Ala Ile Ser Ala Ser Thr Ser Leu Gly
 435 440 445
 Met Gly Pro Cys His Gly Pro Glu Glu Asn Glu Tyr Lys Ser Glu Gly
 450 455 460
 Thr Phe Gly Ile His Val Ala Glu Asn Pro Ser Ile Gln Leu Leu Glu
 465 470 475 480
 Gly Asn Pro Gly Pro Pro Ala Asp Pro Asp Gly Gly Pro Arg Pro Gln
 485 490 495
 Ala Asp Arg Lys Phe Gln Glu Arg Glu Val Pro Cys His Arg Pro Ser
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 gcggggcgcc gacgaggagt gcaggactca ggaagggcga gtgcgcggcg acagagcccc 180
 gggaaggagg cagggcaagg ccgggcttgg gggcaggtgg tccgggcac cagccttgaa 240
 g atg cac aag agg aaa gga ccc ccg gga ccc ccg ggc aga ggc gcc gcg 289
 Met His Lys Arg Lys Gly Pro Pro Gly Pro Pro Gly Arg Gly Ala Ala
 1 5 10 15
 gcc gcc cgc cag ctg gcc ctg ctg gtt gac ctc tcc cca gat ggc ctg 337

Ala	Ala	Arg	Gln	Leu	Gly	Leu	Leu	Val	Asp	Leu	Ser	Pro	Asp	Gly	Leu	
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atg	atc	cct	gag	gac	ggg	gct	aac	gat	gaa	gaa	ctg	gag	gct	gag	ttc	385
Met	Ile	Pro	Glu	Asp	Gly	Ala	Asn	Asp	Glu	Glu	Leu	Glu	Ala	Glu	Phe	
		35					40					45				
ttg	gct	ttg	gtc	ggg	ggc	cag	ccc	cca	gcc	ctg	gag	aag	ctc	aaa	ggc	433
Leu	Ala	Leu	Val	Gly	Gly	Gln	Pro	Pro	Ala	Leu	Glu	Lys	Leu	Lys	Gly	
	50					55					60					
aaa	ggt	ccc	ttg	ccg	atg	gag	gcc	att	gag	aag	atg	gcc	agc	ctg	tgc	481
Lys	Gly	Pro	Leu	Pro	Met	Glu	Ala	Ile	Glu	Lys	Met	Ala	Ser	Leu	Cys	
65					70				75						80	
atg	aga	gac	ccg	gat	gag	gat	gag	gag	gag	ggg	acg	gat	gag	gac	gac	529
Met	Arg	Asp	Pro	Asp	Glu	Asp	Glu	Glu	Glu	Gly	Thr	Asp	Glu	Asp	Asp	
				85					90					95		
ttg	gag	gct	gat	gat	gac	ctg	ctg	gcg	gag	cta	aat	gag	gtc	ctt	gga	577
Leu	Glu	Ala	Asp	Asp	Asp	Leu	Leu	Ala	Glu	Leu	Asn	Glu	Val	Leu	Gly	
			100					105					110			
gag	gag	cag	aag	gct	tca	gag	acc	cca	cct	cct	gtg	gcc	cag	ccg	aag	625
Glu	Glu	Gln	Lys	Ala	Ser	Glu	Thr	Pro	Pro	Pro	Val	Ala	Gln	Pro	Lys	
		115					120					125				
cct	gag	gcc	cct	cat	ccg	ggg	ctg	gag	acc	acc	ttg	cag	gag	agg	ctg	673
Pro	Glu	Ala	Pro	His	Pro	Gly	Leu	Glu	Thr	Thr	Leu	Gln	Glu	Arg	Leu	
	130					135					140					
gcg	ctc	tat	cag	aca	gca	att	gaa	agc	gcc	aga	caa	gct	gga	gac	agc	721
Ala	Leu	Tyr	Gln	Thr	Ala	Ile	Glu	Ser	Ala	Arg	Gln	Ala	Gly	Asp	Ser	
145					150				155						160	
gcc	aag	atg	cgg	cgc	tac	gat	cgg	ggg	ctt	aaa	aca	ctg	gaa	aac	ctg	769
Ala	Lys	Met	Arg	Arg	Tyr	Asp	Arg	Gly	Leu	Lys	Thr	Leu	Glu	Asn	Leu	
			165					170						175		
ctc	gcc	tcc	atc	cgt	aag	ggc	aat	gcc	att	gac	gaa	gcg	gac	atc	ccg	817
Leu	Ala	Ser	Ile	Arg	Lys	Gly	Asn	Ala	Ile	Asp	Glu	Ala	Asp	Ile	Pro	
			180				185						190			
ccg	cca	gtg	gcc	ata	gga	aaa	ggc	ccg	gcg	tcc	acg	cct	acc	tac	agc	865
Pro	Pro	Val	Ala	Ile	Gly	Lys	Gly	Pro	Pro	Ala	Ser	Thr	Pro	Thr	Ser	
		195					200					205				
cct	gca	ccc	acc	cag	ccg	gcc	cct	aga	atc	gcg	tca	gcc	cca	gag	ccc	913
Pro	Ala	Pro	Thr	Gln	Pro	Ala	Pro	Arg	Ile	Ala	Ser	Ala	Pro	Glu	Pro	
	210					215					220					
agg	gtc	acc	ctg	gag	gga	cct	tct	gcc	acc	gcc	cca	gcc	tca	tct	cca	961
Arg	Val	Thr	Leu	Glu	Gly	Pro	Ser	Ala	Thr		Pro	Ala	Ser	Ser	Pro	
225					230				235						240	
ggc	ttg	gct	aag	ccc	cag	atg	ccc	cca	ggg	ccc	tgc	agc	cct	ggc	cct	1009
Gly	Leu	Ala	Lys	Pro	Gln	Met	Pro	Pro	Gly	Pro	Cys	Ser	Pro	Gly	Pro	

245										250					255					
ctg gcc cag ttg cag agc cgc cag cgc gac tac aag ctg gct gcc ctc	1057																			
Leu Ala Gln Leu Gln Ser Arg Gln Arg Asp Tyr Lys Leu Ala Ala Leu																				
260 265 270																				
cac gcc aag cag cag gga gat acc act gct gcc gct aga cac ttc cgc	1105																			
His Ala Lys Gln Gln Gly Asp Thr Thr Ala Ala Ala Arg His Phe Arg																				
275 280 285																				
gtg gct aag agc ttt gat gct gtc ttg gag gcc ctg agc cgg ggt gag	1153																			
Val Ala Lys Ser Phe Asp Ala Val Leu Glu Ala Leu Ser Arg Gly Glu																				
290 295 300																				
ccc gtg gac ctc tcc tgc ctg ccc cct cca ccc gac cag ctg ccc cca	1201																			
Pro Val Asp Leu Ser Cys Leu Pro Pro Pro Pro Asp Gln Leu Pro Pro																				
305 310 315 320																				
gac cca ccg tca cca ccg tgc cag cct ccg acc ccc gct acg gcg ccc	1249																			
Asp Pro Pro Ser Pro Pro Ser Gln Pro Pro Thr Pro Ala Thr Ala Pro																				
325 330 335																				
tcc aca aca gag gtg ccc cca ccc ccg agg acc ctg ctg gag gcg ctg	1297																			
Ser Thr Thr Glu Val Pro Pro Pro Arg Thr Leu Leu Glu Ala Leu																				
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gag cag cgg atg gag cgg tac cag gtg gcc gca gcc cag gcc aag agc	1345																			
Glu Gln Arg Met Glu Arg Tyr Gln Val Ala Ala Ala Gln Ala Lys Ser																				
355 360 365																				
aag ggg gac cag cgg aaa gct cga atg cac gag cgc atc gtc aag caa	1393																			
Lys Gly Asp Gln Arg Lys Ala Arg Met His Glu Arg Ile Val Lys Gln																				
370 375 380																				
tac caa gat gcc atc cga gcc cac aag gct ggc cga gcc gtg gat gtc	1441																			
Tyr Gln Asp Ala Ile Arg Ala His Lys Ala Gly Arg Ala Val Asp Val																				
385 390 395 400																				
gct gaa ttg ccc gtg ccc cca ggc ttc ccc cca atc cag ggc ctg gag	1489																			
Ala Glu Leu Pro Val Pro Pro Gly Phe Pro Pro Ile Gln Gly Leu Glu																				
405 410 415																				
gcc acc aag ccc acc cag cag agt ctg gtg ggt gtc ctg gag act gcc	1537																			
Ala Thr Lys Pro Thr Gln Gln Ser Leu Val Gly Val Leu Glu Thr Ala																				
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atg aag ctg gcc aac cag gat gaa ggc cca gag gat gaa gag gat gag	1585																			
Met Lys Leu Ala Asn Gln Asp Glu Gly Pro Glu Asp Glu Glu Asp Glu																				
435 440 445																				
gtg cct aag aag cag aac agc cct gtg gcc ccc aca gcc cag ccc aaa	1633																			
Val Pro Lys Lys Gln Asn Ser Pro Val Ala Pro Thr Ala Gln Pro Lys																				
450 455 460																				
gcc cca ccc tca aga act ccc cag tgc gga tca gcc cca aca gcc aaa	1681																			
Ala Pro Pro Ser Arg Thr Pro Gln Ser Gly Ser Ala Pro Thr Ala Lys																				
465 470 475 480																				

gcg ccc ccc aaa gcc aca tcc acc aga gcc cag cag cag ctg gcc ttc	1729
Ala Pro Pro Lys Ala Thr Ser Thr Arg Ala Gln Gln Gln Leu Ala Phe	
485 490 495	
cta gag ggc cgc aag aag cag ctc ctg cag gcc gca ctg cga gcc aag	1777
Leu Glu Gly Arg Lys Lys Gln Leu Leu Gln Ala Ala Leu Arg Ala Lys	
500 505 510	
cag aaa aac gac gtg gag ggt gcc aag atg cac ctg cgc caa gcc aag	1825
Gln Lys Asn Asp Val Glu Gly Ala Lys Met His Leu Arg Gln Ala Lys	
515 520 525	
gga ctg gag cct atg ctg gag gcc tcg cgc aat ggg ctg cct gtg gac	1873
Gly Leu Glu Pro Met Leu Glu Ala Ser Arg Asn Gly Leu Pro Val Asp	
530 535 540	
atc acc aag gtg ccg cct gcc cct gtc aac aag gac gac ttt gcc ctg	1921
Ile Thr Lys Val Pro Pro Ala Pro Val Asn Lys Asp Asp Phe Ala Leu	
545 550 555 560	
gtc cag cgg cct ggc ccg ggt ctg tct cag gag gcc gcc cgg cgc tat	1969
Val Gln Arg Pro Gly Pro Gly Leu Ser Gln Glu Ala Ala Arg Arg Tyr	
565 570 575	
ggt gaa ctc acc aag ctc ata cgg cag cag cac gag atg tgc ctg aac	2017
Gly Glu Leu Thr Lys Leu Ile Arg Gln Gln His Glu Met Cys Leu Asn	
580 585 590	
cac tca aac caa ttc acc cag ctg ggc aac atc act gaa acc acc aag	2065
His Ser Asn Gln Phe Thr Gln Leu Gly Asn Ile Thr Glu Thr Thr Lys	
595 600 605	
ttt gaa aag ttg gcg gag gac tgt aag cgg agc atg gac att ctg aag	2113
Phe Glu Lys Leu Ala Glu Asp Cys Lys Arg Ser Met Asp Ile Leu Lys	
610 615 620	
caa gcc ttc gtc cgg ggt ctc ccc acg ccc acc gcc cgc ttt gag caa	2161
Gln Ala Phe Val Arg Gly Leu Pro Thr Pro Thr Ala Arg Phe Glu Gln	
625 630 635 640	
agg acc ttc agc gtc atc aag atc ttc cct gac ctc agc agc aac gac	2209
Arg Thr Phe Ser Val Ile Lys Ile Phe Pro Asp Leu Ser Ser Asn Asp	
645 650 655	
atg ctc ctc ttc atc gtg aag ggc atc aac ttg ccc aca ccc cca gga	2257
Met Leu Leu Phe Ile Val Lys Gly Ile Asn Leu Pro Thr Pro Pro Gly	
660 665 670	
ctg tcc cct ggc gat ctg gat gtc ttt gtt cgg ttt gac ttc ccc tat	2305
Leu Ser Pro Gly Asp Leu Asp Val Phe Val Arg Phe Asp Phe Pro Tyr	
675 680 685	
ccc aac gtg gaa gaa gct cag aaa gac aag acc agt gtg atc aag aac	2353
Pro Asn Val Glu Glu Ala Gln Lys Asp Lys Thr Ser Val Ile Lys Asn	
690 695 700	

aca gac tcc cct gag ttc aag gag cag ttc aaa ctc tgc atc aac cgc	2401
Thr Asp Ser Pro Glu Phe Lys Glu Gln Phe Lys Leu Cys Ile Asn Arg	
705 710 715 720	
agc cac cgt ggc ttc cga agg gcc atc cag acc aag ggc atc aag ttc	2449
Ser His Arg Gly Phe Arg Arg Ala Ile Gln Thr Lys Gly Ile Lys Phe	
725 730 735	
gaa gtg gtt cac aag ggg ggg ctg ttc aag act gac cgg gtg ctg ggg	2497
Glu Val Val His Lys Gly Gly Leu Phe Lys Thr Asp Arg Val Leu Gly	
740 745 750	
aca gcc cag ctg aag ctg gat gca ctg gag ata gca tgt gag gtc cgg	2545
Thr Ala Gln Leu Lys Leu Asp Ala Leu Glu Ile Ala Cys Glu Val Arg	
755 760 765	
gag atc ctt gag gtc ctg gat ggt cgc cgg ccc aca ggg ggg cga ctg	2593
Glu Ile Leu Glu Val Leu Asp Gly Arg Arg Pro Thr Gly Gly Arg Leu	
770 775 780	
gag gta atg gtc cgg att cgg gag cca ctg aca gcc cag cag ttg gag	2641
Glu Val Met Val Arg Ile Arg Glu Pro Leu Thr Ala Gln Gln Leu Glu	
785 790 795 800	
acg acg aca gag agg tgg ctg gtc att gac cct gtg ccg gca gct gtg	2689
Thr Thr Thr Glu Arg Trp Leu Val Ile Asp Pro Val Pro Ala Ala Val	
805 810 815	
ccc aca cag gtt gct ggg ccc aaa ggg aag gcc cct cct gtg cct gcc	2737
Pro Thr Gln Val Ala Gly Pro Lys Gly Lys Ala Pro Pro Val Pro Ala	
820 825 830	
cct gca agg gag tca ggg aac aga tca gcc cgg ccc ctg cat agc ctc	2785
Pro Ala Arg Glu Ser Gly Asn Arg Ser Ala Arg Pro Leu His Ser Leu	
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agt gtg ctg gcg ttt gac caa gag cgt ctg gag cgg aag atc ctg gcc	2833
Ser Val Leu Ala Phe Asp Gln Glu Arg Leu Glu Arg Lys Ile Leu Ala	
850 855 860	
ctc agg cag gcg cgg cgg ccg gtg ccc cca gaa gtg gcc cag cag tac	2881
Leu Arg Gln Ala Arg Arg Pro Val Pro Pro Glu Val Ala Gln Gln Tyr	
865 870 875 880	
cag gac atc atg caa cgc agc cag tgg cag agg gca cag ctg gag cag	2929
Gln Asp Ile Met Gln Arg Ser Gln Trp Gln Arg Ala Gln Leu Glu Gln	
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Gly Gly Val Gly Ile Arg Arg Glu Tyr Thr Ala Gln Leu Glu Arg Gln	
900 905 910	
ctg cag ttc tac acg gag gct gcc cgg cgc ctg ggc aac gat ggc agc	3025
Leu Gln Phe Tyr Thr Glu Ala Ala Arg Arg Leu Gly Asn Asp Gly Ser	
915 920 925	
agg gat gct gca aag gag gcg ctc tat agg cgg aat ctg gta ggg agt	3073

Arg Asp Ala Ala Lys Glu Ala Leu Tyr Arg Arg Asn Leu Val Gly Ser
930 935 940

gag ctg cag cgg ctc cgc agg tgaggagccc atggggcggg cagccccag 3124
Glu Leu Gln Arg Leu Arg Arg
945 950

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35 40 45
Leu Ala Leu Val Gly Gly Gln Pro Pro Ala Leu Glu Lys Leu Lys Gly
50 55 60
Lys Gly Pro Leu Pro Met Glu Ala Ile Glu Lys Met Ala Ser Leu Cys
65 70 75 80
Met Arg Asp Pro Asp Glu Asp Glu Glu Glu Gly Thr Asp Glu Asp Asp
85 90 95
Leu Glu Ala Asp Asp Asp Leu Leu Ala Glu Leu Asn Glu Val Leu Gly
100 105 110
Glu Glu Gln Lys Ala Ser Glu Thr Pro Pro Pro Val Ala Gln Pro Lys
115 120 125
Pro Glu Ala Pro His Pro Gly Leu Glu Thr Thr Leu Gln Glu Arg Leu
130 135 140

Ala	Leu	Tyr	Gln	Thr	Ala	Ile	Glu	Ser	Ala	Arg	Gln	Ala	Gly	Asp	Ser	145	150	155	160
Ala	Lys	Met	Arg	Arg	Tyr	Asp	Arg	Gly	Leu	Lys	Thr	Leu	Glu	Asn	Leu	165	170	175	
Leu	Ala	Ser	Ile	Arg	Lys	Gly	Asn	Ala	Ile	Asp	Glu	Ala	Asp	Ile	Pro	180	185	190	
Pro	Pro	Val	Ala	Ile	Gly	Lys	Gly	Pro	Ala	Ser	Thr	Pro	Thr	Tyr	Ser	195	200	205	
Pro	Ala	Pro	Thr	Gln	Pro	Ala	Pro	Arg	Ile	Ala	Ser	Ala	Pro	Glu	Pro	210	215	220	
Arg	Val	Thr	Leu	Glu	Gly	Pro	Ser	Ala	Thr	Ala	Pro	Ala	Ser	Ser	Pro	225	230	235	240
Gly	Leu	Ala	Lys	Pro	Gln	Met	Pro	Pro	Gly	Pro	Cys	Ser	Pro	Gly	Pro	245	250	255	
Leu	Ala	Gln	Leu	Gln	Ser	Arg	Gln	Arg	Asp	Tyr	Lys	Leu	Ala	Ala	Leu	260	265	270	
His	Ala	Lys	Gln	Gln	Gly	Asp	Thr	Thr	Ala	Ala	Ala	Arg	His	Phe	Arg	275	280	285	
Val	Ala	Lys	Ser	Phe	Asp	Ala	Val	Leu	Glu	Ala	Leu	Ser	Arg	Gly	Glu	290	295	300	
Pro	Val	Asp	Leu	Ser	Cys	Leu	Pro	Pro	Pro	Pro	Asp	Gln	Leu	Pro	Pro	305	310	315	320
Asp	Pro	Pro	Ser	Pro	Pro	Ser	Gln	Pro	Pro	Thr	Pro	Ala	Thr	Ala	Pro	325	330	335	
Ser	Thr	Thr	Glu	Val	Pro	Pro	Pro	Pro	Arg	Thr	Leu	Leu	Glu	Ala	Leu	340	345	350	
Glu	Gln	Arg	Met	Glu	Arg	Tyr	Gln	Val	Ala	Ala	Ala	Gln	Ala	Lys	Ser	355	360	365	
Lys	Gly	Asp	Gln	Arg	Lys	Ala	Arg	Met	His	Glu	Arg	Ile	Val	Lys	Gln	370	375	380	
Tyr	Gln	Asp	Ala	Ile	Arg	Ala	His	Lys	Ala	Gly	Arg	Ala	Val	Asp	Val	385	390	395	400
Ala	Glu	Leu	Pro	Val	Pro	Pro	Gly	Phe	Pro	Pro	Ile	Gln	Gly	Leu	Glu	405	410	415	
Ala	Thr	Lys	Pro	Thr	Gln	Gln	Ser	Leu	Val	Gly	Val	Leu	Glu	Thr	Ala	420	425	430	
Met	Lys	Leu	Ala	Asn	Gln	Asp	Glu	Gly	Pro	Glu	Asp	Glu	Glu	Asp	Glu	435	440	445	

Val Pro Lys Lys Gln Asn Ser Pro Val Ala Pro Thr Ala Gln Pro Lys
 450 455 460
 Ala Pro Pro Ser Arg Thr Pro Gln Ser Gly Ser Ala Pro Thr Ala Lys
 465 470 475 480
 Ala Pro Pro Lys Ala Thr Ser Thr Arg Ala Gln Gln Gln Leu Ala Phe
 485 490 495
 Leu Glu Gly Arg Lys Lys Gln Leu Leu Gln Ala Ala Leu Arg Ala Lys
 500 505 510
 Gln Lys Asn Asp Val Glu Gly Ala Lys Met His Leu Arg Gln Ala Lys
 515 520 525
 Gly Leu Glu Pro Met Leu Glu Ala Ser Arg Asn Gly Leu Pro Val Asp
 530 535 540
 Ile Thr Lys Val Pro Pro Ala Pro Val Asn Lys Asp Asp Phe Ala Leu
 545 550 555 560
 Val Gln Arg Pro Gly Pro Gly Leu Ser Gln Glu Ala Ala Arg Arg Tyr
 565 570 575
 Gly Glu Leu Thr Lys Leu Ile Arg Gln Gln His Glu Met Cys Leu Asn
 580 585 590
 His Ser Asn Gln Phe Thr Gln Leu Gly Asn Ile Thr Glu Thr Thr Lys
 595 600 605
 Phe Glu Lys Leu Ala Glu Asp Cys Lys Arg Ser Met Asp Ile Leu Lys
 610 615 620
 Gln Ala Phe Val Arg Gly Leu Pro Thr Pro Thr Ala Arg Phe Glu Gln
 625 630 635 640
 Arg Thr Phe Ser Val Ile Lys Ile Phe Pro Asp Leu Ser Ser Asn Asp
 645 650 655
 Met Leu Leu Phe Ile Val Lys Gly Ile Asn Leu Pro Thr Pro Pro Gly
 660 665 670
 Leu Ser Pro Gly Asp Leu Asp Val Phe Val Arg Phe Asp Phe Pro Tyr
 675 680 685
 Pro Asn Val Glu Glu Ala Gln Lys Asp Lys Thr Ser Val Ile Lys Asn
 690 695 700
 Thr Asp Ser Pro Glu Phe Lys Glu Gln Phe Lys Leu Cys Ile Asn Arg
 705 710 715 720
 Ser His Arg Gly Phe Arg Arg Ala Ile Gln Thr Lys Gly Ile Lys Phe
 725 730 735
 Glu Val Val His Lys Gly Gly Leu Phe Lys Thr Asp Arg Val Leu Gly
 740 745 750

Thr Ala Gln Leu Lys Leu Asp Ala Leu Glu Ile Ala Cys Glu Val Arg
755 760 765

Glu Ile Leu Glu Val Leu Asp Gly Arg Arg Pro Thr Gly Gly Arg Leu
770 775 780

Glu Val Met Val Arg Ile Arg Glu Pro Leu Thr Ala Gln Gln Leu Glu
785 790 795 800

Thr Thr Thr Glu Arg Trp Leu Val Ile Asp Pro Val Pro Ala Ala Val
805 810 815

Pro Thr Gln Val Ala Gly Pro Lys Gly Lys Ala Pro Pro Val Pro Ala
820 825 830

Pro Ala Arg Glu Ser Gly Asn Arg Ser Ala Arg Pro Leu His Ser Leu
835 840 845

Ser Val Leu Ala Phe Asp Gln Glu Arg Leu Glu Arg Lys Ile Leu Ala
850 855 860

Leu Arg Gln Ala Arg Arg Pro Val Pro Pro Glu Val Ala Gln Gln Tyr
865 870 875 880

Gln Asp Ile Met Gln Arg Ser Gln Trp Gln Arg Ala Gln Leu Glu Gln
885 890 895

Gly Gly Val Gly Ile Arg Arg Glu Tyr Thr Ala Gln Leu Glu Arg Gln
900 905 910

Leu Gln Phe Tyr Thr Glu Ala Ala Arg Arg Leu Gly Asn Asp Gly Ser
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930 935 940

Glu Leu Gln Arg Leu Arg Arg
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tagtccttaa caaagggaag gcgataaatg taaataagct cacattttca gaatgagcgg 180

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gcacctagca	ggctctctgg	gaaaaaaaaa	tcc atg ggt gac aga aga ttt att			594
			Met Gly Asp Arg Arg Phe Ile			
			1		5	
gac ttc caa ttc caa gat tta aat tca agt ctc aga ccc agg ttg gga						642
Asp Phe Gln Phe Gln Asp Leu Asn Ser Ser Leu Arg Pro Arg Leu Gly						
	10		15		20	
aat gca act gcc aat aat act tgc att gtt gat gat tcc ttc aag tat						690
Asn Ala Thr Ala Asn Asn Thr Cys Ile Val Asp Asp Ser Phe Lys Tyr						
	25		30		35	
aat ttg aat ggt gct gtc tat agt gtt gta ttc atc ctg ggt cta ata						738
Asn Leu Asn Gly Ala Val Tyr Ser Val Val Phe Ile Leu Gly Leu Ile						
	40		45		50	55
acc aac agt gcc tcc ctg ttt gtc ttc tgc ttc cgc atg aaa atg aga						786
Thr Asn Ser Ala Ser Leu Phe Val Phe Cys Phe Arg Met Lys Met Arg						
		60			65	70
agt gag acg gct act ttc atc acc aac ctg gcc ctc tct gat ttg ctt						834
Ser Glu Thr Ala Thr Phe Ile Thr Asn Leu Ala Leu Ser Asp Leu Leu						
		75			80	85
ttt gtt tgt acc cta cct ttc aaa ata ttt tac aac ttt aat cgc cac						882
Phe Val Cys Thr Leu Pro Phe Lys Ile Phe Tyr Asn Phe Asn Arg His						
		90			95	100
tgg cct ttt ggt gac acc ctc tgt aag atc tca ggg act gcg ttc ctc						930
Trp Pro Phe Gly Asp Thr Leu Cys Lys Ile Ser Gly Thr Ala Phe Leu						
	105				110	115
acc aac atc tat ggg agc atg ctc ttc ctc acc tgc atc agt gtg gat						978
Thr Asn Ile Tyr Gly Ser Met Leu Phe Leu Thr Cys Ile Ser Val Asp						
	120				125	130
cgt ttc cta gcc att gtc tat ccc ttc cga tcg cgt acc atc agg acc						1026
Arg Phe Leu Ala Ile Val Tyr Pro Phe Arg Ser Arg Thr Ile Arg Thr						
		140			145	150
agg agg aat tcc gcc att gtg tgc gct gga gtc tgg atc cta gtc ctc						1074
Arg Arg Asn Ser Ala Ile Val Cys Ala Gly Val Trp Ile Leu Val Leu						
		155			160	165
agt ggt ggt att tca gct tct ttg ttc tcc acc act aat gtc aac aat						1122

Ser	Gly	Gly	Ile	Ser	Ala	Ser	Leu	Phe	Ser	Thr	Thr	Asn	Val	Asn	Asn		
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gcg	acc	acc	act	tgc	ttt	gaa	ggc	ttc	tcc	aaa	cgt	gtc	tgg	aag	aca	1170	
Ala	Thr	Thr	Thr	Cys	Phe	Glu	Gly	Phe	Ser	Lys	Arg	Val	Trp	Lys	Thr		
	185					190					195						
tac	ctg	tcc	aag	atc	act	ata	ttc	att	gaa	gtt	gtt	gga	ttc	atc	att	1218	
Tyr	Leu	Ser	Lys	Ile	Thr	Ile	Phe	Ile	Glu	Val	Val	Gly	Phe	Ile	Ile		
200					205					210					215		
cct	ctg	ata	ttg	aat	gtt	tct	tgt	tct	tct	gtg	gtg	ctt	aga	acc	ctc	1266	
Pro	Leu	Ile	Leu	Asn	Val	Ser	Cys	Ser	Ser	Val	Val	Leu	Arg	Thr	Leu		
				220						225				230			
cgc	aag	cct	gca	aca	ttg	tct	cag	att	ggg	acc	aat	aag	aaa	aaa	gtg	1314	
Arg	Lys	Pro	Ala	Thr	Leu	Ser	Gln	Ile	Gly	Thr	Asn	Lys	Lys	Lys	Val		
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ttg	aag	atg	atc	aca	gtg	cat	atg	gca	gtg	ttt	gtg	gta	tgc	ttt	gta	1362	
Leu	Lys	Met	Ile	Thr	Val	His	Met	Ala	Val	Phe	Val	Val	Cys	Phe	Val		
		250					255					260					
cca	tac	aac	tcc	gtt	ctc	ttt	tta	tat	gcc	ttg	gta	cgc	tcc	caa	gcc	1410	
Pro	Tyr	Asn	Ser	Val	Leu	Phe	Leu	Tyr	Ala	Leu	Val	Arg	Ser	Gln	Ala		
	265					270					275						
att	act	aat	tgc	tta	ttg	gaa	agg	ttt	gca	aag	atc	atg	tac	cca	att	1458	
Ile	Thr	Asn	Cys	Leu	Leu	Glu	Arg	Phe	Ala	Lys	Ile	Met	Tyr	Pro	Ile		
280					285					290					295		
acc	ttg	tgc	ctt	gca	act	ctg	aat	tgt	tgc	ttt	gat	cct	ttt	atc	tat	1506	
Thr	Leu	Cys	Leu	Ala	Thr	Leu	Asn	Cys	Cys	Phe	Asp	Pro	Phe	Ile	Tyr		
				300					305					310			
tac	ttc	act	ctt	gaa	tcc	ttt	cag	aag	tcc	ttt	tat	atc	aat	aca	cat	1554	
Tyr	Phe	Thr	Leu	Glu	Ser	Phe	Gln	Lys	Ser	Phe	Tyr	Ile	Asn	Thr	His		
			315					320					325				
ata	agg	atg	gag	tcg	ctg	ttt	aag	act	gag	aca	cct	ctg	acc	ccc	aaa	1602	
Ile	Arg	Met	Glu	Ser	Leu	Phe	Lys	Thr	Glu	Thr	Pro	Leu	Thr	Pro	Lys		
		330					335					340					
cct	tcc	ctt	cca	gct	atc	caa	gag	gaa	gtt	agt	gat	caa	aca	aca	aat	1650	
Pro	Ser	Leu	Pro	Ala	Ile	Gln	Glu	Glu	Val	Ser	Asp	Gln	Thr	Thr	Asn		
		345				350					355						
aat	ggt	ggt	gaa	tta	atg	ctg	gaa	tcc	acc	ttc	taggtaccag	aattgtcttt	1703				
Asn	Gly	Gly	Glu	Leu	Met	Leu	Glu	Ser	Thr	Phe							
360					365					370							
cagggttcagc	tacagtgtct	cttatgattt	ttttcctatg	ctataaatag	gagaaacaaa	1763											
ttgaagctaa	tgatactgag	aatagagtaa	tgtaccaa	at	gcagtcagat	acatttgttt	1823										
gaacactatt	gtacatat	ttc	tgttttgttc	agtaattata	ggccaagtct	aattacaaca	1883										

accaaaacag atcagcctct tctgttgagt tgacttttca ttacctaaat gaccagtggg 1943
 cttgactttt agtgatgtga gggttatttt taaacttaaa aaaaaaggca ttccagtaat 2003
 tttggtaatt gggttgggcc tataaatata gaacaaattc agggtattatt taaaaacatc 2063
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 attagtgtca gcttttaaaa ctttcttttt aaaataattc tagaattttc atatgaaatt 2363
 gttaatcctg aaagggtgcta cttatgtgcc tggcaggtat aaaatggaaa actcataaaa 2423
 ttaacagtggt caatttaaaa aaaaaaaaaac ttttaagcaac actatattat ttcttaagat 2483
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 <212> PRT
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 20 25 30
 Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr Ser Val
 35 40 45
 Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Ala Ser Leu Phe Val Phe
 50 55 60
 Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Thr Phe Ile Thr Asn
 65 70 75 80
 Leu Ala Leu Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe Lys Ile
 85 90 95

Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu Cys Lys
 100 105 110
 Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met Leu Phe
 115 120 125
 Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr Pro Phe
 130 135 140
 Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val Cys Ala
 145 150 155 160
 Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser Leu Phe
 165 170 175
 Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu Gly Phe
 180 185 190
 Ser Lys Arg Val Trp Lys Thr Tyr Leu Ser Lys Ile Thr Ile Phe Ile
 195 200 205
 Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser Cys Ser
 210 215 220
 Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser Gln Ile
 225 230 235 240
 Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His Met Ala
 245 250 255
 Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe Leu Tyr
 260 265 270
 Ala Leu Val Arg Ser Gln Ala Ile Thr Asn Cys Leu Leu Glu Arg Phe
 275 280 285
 Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu Asn Cys
 290 295 300
 Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe Gln Lys
 305 310 315 320
 Ser Phe Tyr Ile Asn Thr His Ile Arg Met Glu Ser Leu Phe Lys Thr
 325 330 335
 Glu Thr Pro Leu Thr Pro Lys Pro Ser Leu Pro Ala Ile Gln Glu Glu
 340 345 350
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 355 360 365
 Thr Phe
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<210> 175

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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (67)..(1176)

<400> 175

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    Met Gly Asp Arg Arg Phe Ile Asp Phe Gln Phe Gln Asp Ser
        1                5                10

aat tca agc ctc aga ccc agg ttg ggc aat gct act gcc aat aat act      156
Asn Ser Ser Leu Arg Pro Arg Leu Gly Asn Ala Thr Ala Asn Asn Thr
    15                20                25                30

tgc att gtt gat gat tcc ttc aag tat aat ctc aat ggt gct gtc tac      204
Cys Ile Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr
                35                40                45

agt gtt gta ttc atc ttg ggt ctg ata acc aac agt gtc tct ctg ttt      252
Ser Val Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Val Ser Leu Phe
                50                55                60

gtc ttc tgt ttc cgc atg aaa atg aga agt gag act gct att ttt atc      300
Val Phe Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Ile Phe Ile
                65                70                75

acc aat cta gct gtc tct gat ttg ctt ttt gtc tgt aca cta cct ttt      348
Thr Asn Leu Ala Val Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe
                80                85                90

aaa ata ttt tac aac ttc aac cgc cac tgg cct ttt ggt gac acc ctc      396
Lys Ile Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu
    95                100                105                110

tgc aag atc tct gga act gca ttc ctt acc aac atc tat ggg agc atg      444
Cys Lys Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met
                115                120                125

ctc ttt ctc acc tgt att agt gtg gat cgt ttc ctg gcc att gtc tat      492
Leu Phe Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr
                130                135                140

cct ttt cga tct cgt act att agg act agg agg aat tct gcc att gtg      540
Pro Phe Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val
                145                150                155

tgt gct ggt gtc tgg atc cta gtc ctc agt ggc ggt att tca gcc tct      588
Cys Ala Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser
    160                165                170

ttg ttt tcc acc act aat gtc aac aat gca acc acc acc tgc ttt gaa      636
Leu Phe Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu
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175	180	185	190	
ggc ttc tcc aaa cgt gtc tgg aag act tat tta tcc aag atc aca ata				684
Gly Phe Ser Lys Arg Val Trp Lys Thr Tyr Leu Ser Lys Ile Thr Ile	195	200	205	
ttt att gaa gtt gtt ggg ttt atc att cct cta ata ttg aat gtc tct				732
Phe Ile Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser	210	215	220	
tgc tct tct gtg gtg ctg aga act ctt cgc aag cct gct act ctg tct				780
Cys Ser Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser	225	230	235	
caa att ggg acc aat aag aaa aaa gta ctg aaa atg atc aca gta cat				828
Gln Ile Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His	240	245	250	
atg gca gtc ttt gtg gta tgc ttt gta ccc tac aac tct gtc ctc ttc				876
Met Ala Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe	255	260	265	270
ttg tat gcc ctg gtg cgc tcc caa gct att act aat tgc ttt ttg gaa				924
Leu Tyr Ala Leu Val Arg Ser Gln Ala Ile Thr Asn Cys Phe Leu Glu	275	280	285	
aga ttt gca aag atc atg tac cca atc acc ttg tgc ctt gca act ctg				972
Arg Phe Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu	290	295	300	
aac tgt tgt ttt gac cct ttc atc tat tac ttc acc ctt gaa tcc ttt				1020
Asn Cys Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe	305	310	315	
cag aag tcc ttc tac atc aat gcc cac atc aga atg gag tcc ctg ttt				1068
Gln Lys Ser Phe Tyr Ile Asn Ala His Ile Arg Met Glu Ser Leu Phe	320	325	330	
aag act gaa aca cct ttg acc aca aag cct tcc ctt cca gct att caa				1116
Lys Thr Glu Thr Pro Leu Thr Thr Lys Pro Ser Leu Pro Ala Ile Gln	335	340	345	350
gag gaa gtg agt gat caa aca aca aat aat ggt ggt gaa tta atg cta				1164
Glu Glu Val Ser Asp Gln Thr Thr Asn Asn Gly Gly Glu Leu Met Leu	355	360	365	
gaa tcc acc ttt taggtatgag aaatgtgttc aggtccagat atggtttctc				1216
Glu Ser Thr Phe	370			
ctataatttt tcctatgcta taaactaaag atttgaagct aatgatactg agaataatgc				1276
accaaattcca gtcagatata tttgtttgaa ggtatactgt agagttttta ttgctgtttt				1336
gttcagtaat tatagggtcaa atctaattac aacaaccaag atggattgcc aaactcttct				1396
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gagatgactt tgaaactttc aaaaagggtat ttctattcca atgatatttg gtaattaggt 1516
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 cct 2299

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 <212> PRT
 <213> Homo sapiens

<400> 176
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 Val Asp Asp Ser Phe Lys Tyr Asn Leu Asn Gly Ala Val Tyr Ser Val
 35 40 45
 Val Phe Ile Leu Gly Leu Ile Thr Asn Ser Val Ser Leu Phe Val Phe
 50 55 60
 Cys Phe Arg Met Lys Met Arg Ser Glu Thr Ala Ile Phe Ile Thr Asn
 65 70 75 80
 Leu Ala Val Ser Asp Leu Leu Phe Val Cys Thr Leu Pro Phe Lys Ile
 85 90 95
 Phe Tyr Asn Phe Asn Arg His Trp Pro Phe Gly Asp Thr Leu Cys Lys

100	105	110
Ile Ser Gly Thr Ala Phe Leu Thr Asn Ile Tyr Gly Ser Met Leu Phe 115 120 125		
Leu Thr Cys Ile Ser Val Asp Arg Phe Leu Ala Ile Val Tyr Pro Phe 130 135 140		
Arg Ser Arg Thr Ile Arg Thr Arg Arg Asn Ser Ala Ile Val Cys Ala 145 150 155 160		
Gly Val Trp Ile Leu Val Leu Ser Gly Gly Ile Ser Ala Ser Leu Phe 165 170 175		
Ser Thr Thr Asn Val Asn Asn Ala Thr Thr Thr Cys Phe Glu Gly Phe 180 185 190		
Ser Lys Arg Val Trp Lys Thr Tyr Leu Ser Lys Ile Thr Ile Phe Ile 195 200 205		
Glu Val Val Gly Phe Ile Ile Pro Leu Ile Leu Asn Val Ser Cys Ser 210 215 220		
Ser Val Val Leu Arg Thr Leu Arg Lys Pro Ala Thr Leu Ser Gln Ile 225 230 235 240		
Gly Thr Asn Lys Lys Lys Val Leu Lys Met Ile Thr Val His Met Ala 245 250 255		
Val Phe Val Val Cys Phe Val Pro Tyr Asn Ser Val Leu Phe Leu Tyr 260 265 270		
Ala Leu Val Arg Ser Gln Ala Ile Thr Asn Cys Phe Leu Glu Arg Phe 275 280 285		
Ala Lys Ile Met Tyr Pro Ile Thr Leu Cys Leu Ala Thr Leu Asn Cys 290 295 300		
Cys Phe Asp Pro Phe Ile Tyr Tyr Phe Thr Leu Glu Ser Phe Gln Lys 305 310 315 320		
Ser Phe Tyr Ile Asn Ala His Ile Arg Met Glu Ser Leu Phe Lys Thr 325 330 335		
Glu Thr Pro Leu Thr Thr Lys Pro Ser Leu Pro Ala Ile Gln Glu Glu 340 345 350		
Val Ser Asp Gln Thr Thr Asn Asn Gly Gly Glu Leu Met Leu Glu Ser 355 360 365		
Thr Phe 370		

<210> 177

<211> 973

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (30)..(416)

<400> 177

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Leu Leu Arg Leu Leu Val Leu Gly Leu Trp Leu Ala Leu Leu Arg Ser
   10                               15                               20

gtg gcc ggg gag caa gcg cca ggc acc gcc ccc tgc tcc cgc ggc agc  149
Val Ala Gly Glu Gln Ala Pro Gly Thr Ala Pro Cys Ser Arg Gly Ser
   25                               30                               35                               40

tcc tgg agc gcg gac ctg gac aag tgc atg gac tgc gcg tct tgc agg  197
Ser Trp Ser Ala Asp Leu Asp Lys Cys Met Asp Cys Ala Ser Cys Arg
                               45                               50                               55

gcg cga ccg cac agc gac ttc tgc ctg ggc tgc gct gca gca cct cct  245
Ala Arg Pro His Ser Asp Phe Cys Leu Gly Cys Ala Ala Ala Pro Pro
                               60                               65                               70

gcc ccc ttc cgg ctg ctt tgg ccc atc ctt ggg ggc gct ctg agc ctg  293
Ala Pro Phe Arg Leu Leu Trp Pro Ile Leu Gly Gly Ala Leu Ser Leu
                               75                               80                               85

acc ttc gtg ctg ggg ctg ctt tct ggc ttt ttg gtc tgg aga cga tgc  341
Thr Phe Val Leu Gly Leu Leu Ser Gly Phe Leu Val Trp Arg Arg Cys
   90                               95                               100

cgc agg aga gag aag ttc acc acc ccc ata gag gag acc ggc gga gag  389
Arg Arg Arg Glu Lys Phe Thr Thr Pro Ile Glu Glu Thr Gly Gly Glu
  105                               110                               115                               120

ggc tgc cca gct gtg gcg ctg atc cag tgacaatgtg cccctgccca  436
Gly Cys Pro Ala Val Ala Leu Ile Gln
                               125

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Thr Ala Pro Cys Ser Arg Gly Ser Ser Trp Ser Ala Asp Leu Asp Lys
35 40 45

Cys Met Asp Cys Ala Ser Cys Arg Ala Arg Pro His Ser Asp Phe Cys
50 55 60

Leu Gly Cys Ala Ala Ala Pro Pro Ala Pro Phe Arg Leu Leu Trp Pro
65 70 75 80

Ile Leu Gly Gly Ala Leu Ser Leu Thr Phe Val Leu Gly Leu Leu Ser
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